

**Question Paper Preview**

Degree College Lecturers (Notification No: 26/2016) Question Paper with Official Key

**Notations :**

- Options shown in green color and with ✓ icon are correct.
- Options shown in red color and with ✗ icon are incorrect.

**Question Paper Name:** Chemistry 7th June 2017 Shift 1  
**Subject Name:** Chemistry  
**Creation Date:** 2017-06-07 16:57:00  
**Duration:** 150  
**Total Marks:** 300  
**Display Marks:** No  
**Calculator:** Scientific  
**Magnifying Glass Required?:** No  
**Ruler Required?:** No  
**Eraser Required?:** No  
**Scratch Pad Required?:** No  
**Rough Sketch/Notepad Required?:** No  
**Protractor Required?:** No

Chemistry

**Group Number :** 1  
**Group Id :** 798407157  
**Group Maximum Duration :** 0  
**Group Minimum Duration :** 150  
**Revisit allowed for view? :** No  
**Revisit allowed for edit? :** No  
**Break time:** 0  
**Group Marks:** 300

Chemistry

**Section Id :** 798407157  
**Section Number :** 1  
**Section type :** Online  
**Mandatory or Optional:** Mandatory  
**Number of Questions:** 150  
**Number of Questions to be attempted:** 150  
**Section Marks:** 300  
**Display Number Panel:** Yes  
**Group All Questions:** No

**Sub-Section Number:** 1  
**Sub-Section Id:** 798407193  
**Question Shuffling Allowed :** Yes

Question Number : 1 Question Id : 79840723437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

An example of extrinsic semiconductor is

Options :

1. ✘ Diamond
2. ✘ Rubber
3. ✘ Si
4. ✔ Si doped with small amount of Ga impurity

Question Number : 1 Question Id : 79840723437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది వాటిలో ఏది బాహ్య అర్ధ వాహకానికి ఉదాహరణ

Options :

1. ✘ డైమండ్
2. ✘ రబ్బరు
3. ✘ Si
4. ✔ Ga మలినాన్ని కలిగిన Si

Question Number : 2 Question Id : 79840723438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A perfect superconductor is a

Options :

1. ✘ Paramagnetic material
2. ✘ ferromagnetic material
3. ✘ Antiferromagnetic material
4. ✔ diamagnetic material.

Question Number : 2 Question Id : 79840723438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఏది పరిపూర్ణ అతివాహకం?

Options :

1. ✘ పరాయస్కాంత పదార్థం
2. ✘ ఫెర్రో అయస్కాంత పదార్థం

3. ✖ యాంటి ఫెర్ అయస్కాంత పదార్థం

4. ✔ ప్రత్యయస్కాంత పదార్థం

Question Number : 3 Question Id : 79840723439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A material was used as rectifier for changing alternate current into direct current. The material consists of

Options :

1. ✖ n – type semiconductor

2. ✖ P – type semiconductor

3. ✔ combination of n – and p – type semiconductors (n – p junction)

4. ✖ combination of an insulator and n – type semiconductor

Question Number : 3 Question Id : 79840723439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఏకాంతర విద్యుత్ ప్రవాహం ను ఏకముఖ ప్రవాహం గా మార్చటానికి ఒక పదార్థాన్ని ప్రతిశోధకంగా వాడతారు. ఆ పదార్థం లో ఉండునది :

Options :

1. ✖ n – రకం అర్ధవాహకం

2. ✖ p – రకం అర్ధవాహకం

3. ✔ n- మరియు p- రకాల అర్ధ వాహకాల సంయోగం (n-p సంధి)

4. ✖ బంధకం మరియు n-రకం అర్ధవాహకాల సంయోగం

Question Number : 4 Question Id : 79840723440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The magnetic susceptibility ( $\chi$ ) of a paramagnetic material varies with temperature (T). The correct relationship between  $\chi$  and T (in K) is

Options :

1. ✖  $\chi \propto T$

2. ✖  $\chi \propto T^2$

3. ✖  $\chi \propto T^{-2}$

4. ✔  $\chi \propto T^{-1}$

Question Number : 4 Question Id : 79840723440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక పరాయస్కాంత పదార్థపు అయస్కాంత వ్యక్త ఉష్ణోగ్రత (T) తో మారుతుంది.  $\chi, T$  (K లలో) ల మధ్య

సరియైన సంబంధం

Options :

1. ✘  $\chi \propto T$
2. ✘  $\chi \propto T^2$
3. ✘  $\chi \propto T^{-2}$
4. ✔  $\chi \propto T^{-1}$

Question Number : 5 Question Id : 79840723441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

An example for 123 superconductor is

Options :

1. ✘  $\text{BaY}_2\text{Cu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
2. ✔  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
3. ✘  $\text{YCu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
4. ✘  $\text{YBa}_2\text{Cu}_3\text{O}_6$

Question Number : 5 Question Id : 79840723441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

123- అతివాహకానికి ఇది ఉదాహరణ

Options :

1. ✘  $\text{BaY}_2\text{Cu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
2. ✔  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
3. ✘  $\text{YCu}_3\text{O}_{7-x}$  ( $x \approx 0.3$ )
4. ✘  $\text{YBa}_2\text{Cu}_3\text{O}_6$

Question Number : 6 Question Id : 79840723442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A photochemical reaction absorbs  $2 \times 10^{16}$  quanta of radiation per second. When it is irradiated for 15 minutes, it was noticed that  $3 \times 10^{-4}$  moles of reactant was converted to product. What is the quantum yield of the reaction? ( $N = 6 \times 10^{23} \text{ mole}^{-1}$ ).

Options :

1. ✘ 100
2. ✔ 10
3. ✘ 1
4. ✘ 1000

Question Number : 6 Question Id : 79840723442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక కాంతి రసాయన చర్య సెకనుకు  $2 \times 10^{16}$  వికీరణ క్వాంటాలను శోషిస్తుంది, దానిని 15 నిమిషముల పాటు ఉద్యోతనం చెందించి నప్పుడు,  $3 \times 10^{-4}$  మోల్ ల క్రియాజనకం, క్రియాజన్యం గా మారినట్లు గమనింపబడినది. చర్య క్వాంటం ప్రాప్తి ఎంత ? ( $N = 6 \times 10^{23} \text{ mole}^{-1}$ ).

Options :

1. ✘ 100
2. ✔ 10
3. ✘ 1
4. ✘ 1000

Question Number : 7 Question Id : 79840723443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In a photochemical reaction, the quantum yield ( $\phi$ ) in the absence ( $\phi_0$ ) and presence ( $\phi_Q$ ) of the quencher (Q) is estimated. A plot of  $(\frac{\phi_0}{\phi_Q})$  versus concentration of quencher ( $[Q]$ ) gave a straight line with intercept equal to

Options :

1. ✘ zero
2. ✘ +10
3. ✔ +1
4. ✘ -1

Question Number : 7 Question Id : 79840723443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక కాంతి రసాయన చర్యకు క్వాంటం ప్రొఫై (φ) ద్రుతశీతలన కారిణి (quencher) లేనప్పుడు (φ<sub>0</sub>) మరియు

ఉన్నప్పుడు (φ<sub>Q</sub>) లెక్కించబడినది. ( $\frac{\phi_0}{\phi_Q}$ ), ద్రుతశీతలన కారిణి గాఢతలకు గ్రాఫ్ గీసినప్పుడు సరళరేఖ నిస్తుంది.

దాని అంతః ఖండన విలువ :

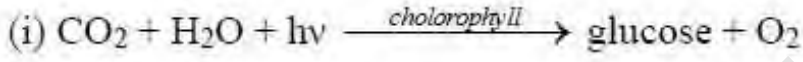
Options :

1. ✘ Zero
2. ✘ +10
3. ✔ +1
4. ✘ -1

Question Number : 8 Question Id : 79840723444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Observe the following reactions.



In the above reactions, light is absorbed by

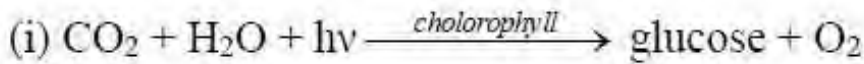
Options :

1. ✘ chlorophyll and H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>, respectively
2. ✘ CO<sub>2</sub> and UO<sub>2</sub>SO<sub>4</sub>, respectively
3. ✔ chlorophyll and UO<sub>2</sub>SO<sub>4</sub>, respectively
4. ✘ H<sub>2</sub>O and UO<sub>2</sub>SO<sub>4</sub>, respectively

Question Number : 8 Question Id : 79840723444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది చర్యలను పరిశీలించండి



పై చర్యలలో ఏవి కాంతిని శోషించుతాయి

Options :

1. ✘ క్లోరోఫిల్ మరియు H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>, వరుసగా

2. ✖ CO<sub>2</sub> , UO<sub>2</sub>SO<sub>4</sub>, వరుసగా

3. ✔ క్షోరోఫిల్ మరియు UO<sub>2</sub>SO<sub>4</sub>, వరుసగా

4. ✖ H<sub>2</sub>O మరియు UO<sub>2</sub>SO<sub>4</sub>, వరుసగా

Question Number : 9 Question Id : 79840723445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

At 27°C, the rate constant of the reaction



is  $3 \times 10^9 \text{ dm}^6 \text{ mol}^{-2} \text{ s}^{-1}$ . The rate constant was obtained using

Options :

1. ✖ volumetric titration of I<sub>2</sub> with standard Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

2. ✔ measurement of absorbance spectrophotometrically in a flash photolysis equipment

3. ✖ continuous flow method

4. ✖ stopped flow method

Question Number : 9 Question Id : 79840723445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

27°C వద్ద

$I + I + Ar \longrightarrow I_2 + Ar$  చర్య రేటు స్థిరాంకం  $3 \times 10^9$  డి. మి<sup>6</sup> మోల్<sup>-2</sup> సె<sup>-1</sup> ( $\text{dm}^6 \text{ mol}^{-2} \text{ s}^{-1}$ ) . దేనిని

ఉపయోగించి రేటు స్థిరాంకాన్ని పొందుతారు?

Options :

1. ✖ ప్రమాణ Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> తో I<sub>2</sub> ఘనపరిమాణాత్మక అంశమాపనం

2. ✔ ప్రజ్వలన కాంతి విశ్లేషణ పరికరం (FLASH PHOTOLYSIS equipment) తో, వర్ణ పటీయ శోషణను కొలిచే

3. ✖ నిరంతర ప్రవాహ పద్ధతి

4. ✖ విరామ ప్రవాహ పద్ధతి

Question Number : 10 Question Id : 79840723446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A photochemical reaction is given as

<u>Reaction</u>	<u>Rate</u>
$h\nu + S_0 \longrightarrow S_1$	I
$S_1 \longrightarrow S_0 + \text{heat}$	$k_{IC} [S_1]$
$S_1 \longrightarrow T_1 + \text{heat}$	$k_{ST} [S_1]$
$T_1 \longrightarrow S_0 + \text{heat}$	$k_{TS} [T_1]$
$S_1 \longrightarrow S_0 + h\nu^1$	$k_F^o [S_1]$

If the quantum yield of fluorescence ( $\Phi_F$ ) is given by

$$\Phi_F = \frac{k_F^o}{k_F^o + k_{ST} + k_{IC}}$$

The singlet lifetime  $\tau_s$  is given by

Options :

1. ✘  $\tau_s = k_F^o + k_{ST} + k_{IC}$
2. ✔  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{-1}$
3. ✘  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{1/2}$
4. ✘  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{-1/2}$

Question Number : 10 Question Id : 79840723446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66



ఒక కాంతి రసాయన చర్యను క్రింది విధంగా చూపారు

చర్య	రేటు
$h\nu + S_0 \longrightarrow S_1$	I
$S_1 \longrightarrow S_0 + \text{heat}$	$k_{IC} [S_1]$
$S_1 \longrightarrow T_1 + \text{heat}$	$k_{ST} [S_1]$
$T_1 \longrightarrow S_0 + \text{heat}$	$k_{TS} [T_1]$
$S_1 \longrightarrow S_0 + h\nu^1$	$k_F^o [S_1]$

ప్రతిదీప్తి క్వాంటం ప్రాప్తి ( $\Phi_F$ ) ను  $\Phi_F = \frac{k_F^o}{k_F^o + k_{ST} + k_{IC}}$  ఇచ్చినపుడు

ఏకైకం (singlet) ఆయు కాలమును ఇచ్చునది.

Options :

1. ✘  $\tau_s = k_F^o + k_{ST} + k_{IC}$
2. ✔  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{-1}$
3. ✘  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{1/2}$
4. ✘  $\tau_s = (k_F^o + k_{ST} + k_{IC})^{-1/2}$

Question Number : 11 Question Id : 79840723447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

At 300 K, one mole of an ideal gas expanded reversibly from a volume of 10 L to 100 L. The entropy change (in  $\text{J K}^{-1}$ ) is ( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ )

Options :

1. ✔ 19.147
2. ✘ -19.147
3. ✘ 1.9147
4. ✘ -1.9147

Question Number : 11 Question Id : 79840723447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

300 K వద్ద , ఒక మోల్ ఆదర్శ వాయువు 10 L నుండి 100 L కు ఉత్తమనీయ వ్యాకోచం చెందింది.

ఎంట్రోపీ మార్పు  $J K^{-1}$  లలో ఎంత ? ( $R = 8.314 J mol^{-1} K^{-1}$ )

Options :

1. ✓ 19.147
2. ✗ -19.147
3. ✗ 1.9147
4. ✗ -1.9147

Question Number : 12 Question Id : 79840723448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify the correct equation for entropy change ( $\Delta S$ ) of one mole of an ideal gas with initial volume ( $V_1$ ) and temperature ( $T_1$ ) is changed to final volume ( $V_2$ ) and temperature ( $T_2$ ). (Assume  $C_v$  to be constant between  $T_1$  and  $T_2$ ).

Options :

1. ✗  $\Delta S = C_v \ln \frac{T_1}{T_2} + R \ln \frac{V_1}{V_2}$
2. ✗  $\Delta S = \ln \frac{T_2}{T_1} + R \ln \frac{V_2}{V_1}$
3. ✓  $\Delta S = C_v \ln \frac{T_2}{T_1} + R \ln \frac{V_2}{V_1}$
4. ✗  $\Delta S = C_v \ln \frac{T_2}{T_1} - R \ln \frac{V_2}{V_1}$

Question Number : 12 Question Id : 79840723448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

తొలి ఘనపరిమాణం ( $V_1$ ) మరియు ఉష్ణోగ్రత ( $T_1$ ) గల ఒక మోల్ ఆదర్శ వాయువు తుది ఘనపరిమాణం ( $V_2$ ) మరియు ఉష్ణోగ్రత ( $T_2$ ) లకు మార్పుచెందినపుడు దాని ఎంట్రోపీ మార్పు ( $\Delta S$ ) నకు సరియైన సమీకరణాన్ని గుర్తించండి ( $T_1$  మరియు  $T_2$  ల మధ్య  $C_v$  స్థిరమని భావించండి ).

Options :

1. ✗  $\Delta S = C_v \ln \frac{T_1}{T_2} + R \ln \frac{V_1}{V_2}$
2. ✗  $\Delta S = \ln \frac{T_2}{T_1} + R \ln \frac{V_2}{V_1}$

$$\Delta S = C_v \ln \frac{T_2}{T_1} + R \ln \frac{V_2}{V_1}$$

3. ✓

$$\Delta S = C_v \ln \frac{T_2}{T_1} - R \ln \frac{V_2}{V_1}$$

4. ✘

Question Number : 13 Question Id : 79840723449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

For the determination of absolute entropy ( $S_T$ ) of a solid between  $T_1$  and  $T_2$ , the property of solid is measured in this temperature range and plotted. The area under the curve gave a measure of  $S_T$ . What are the variables plotted?

Options :

x -axis

y-axis

1. ✘

$\ln T$

$C_v$

x -axis

y-axis

2. ✓

$\ln T$

$C_p$

x -axis

y-axis

3. ✘

$T$

$C_p$

x -axis

y-axis

4. ✘

$\ln \frac{1}{T}$

$C_p$

Question Number : 13 Question Id : 79840723449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$T_1$  మరియు  $T_2$  ల మధ్య ఒక ఘనపదార్థపు పరమ ఎంట్రోపీ ( $S_T$ ) ని నిర్ధారించుటకు, ఆ ఉష్ణోగ్రత వ్యవధులలో ఘనపదార్థపు ద్రావణిని కొలిచారు వక్రములోని వైశాల్యం  $S_T$  ని ఇస్తుంది. ఏ చరాంకలకు గ్రాఫ్ గీసారు

Options :

X -అక్షము

y-అక్షము

1. ✘

$\ln T$

$C_v$

X -అక్షము

y-అక్షము

2. ✓

$\ln T$

$C_p$

3. ✖	X-అక్షము $T$	y-అక్షము $C_p$
4. ✖	X-అక్షము $\ln \frac{1}{T}$	y-అక్షము $C_p$

Question Number : 14 Question Id : 79840723450 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Observe the following reactions.

- (a).  $A \rightarrow B$  ;  $\Delta H = -40 \text{ kJ}$  ;  $T\Delta S = -100 \text{ kJ}$   
 (b).  $P \rightarrow Q$  ;  $\Delta H = -80 \text{ kJ}$  ;  $T\Delta S = 10 \text{ kJ}$   
 (c).  $X \rightarrow Y$  ;  $\Delta H = 30 \text{ kJ}$  ;  $T\Delta S = 120 \text{ kJ}$   
 (d).  $M \rightarrow N$  ;  $\Delta H = -50 \text{ kJ}$  ;  $T\Delta S = -150 \text{ kJ}$   
 (e).  $C \rightarrow D$  ;  $\Delta H = 100 \text{ kJ}$  ;  $T\Delta S = 40 \text{ kJ}$

The reactions that occur spontaneously are

Options :

1. ✖ (a), (d), (e)  
 2. ✖ (a), (d)  
 3. ✔ (b), (c)  
 4. ✖ (a), (e)

Question Number : 14 Question Id : 79840723450 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది చర్యలని పరిశీలించండి

- (a).  $A \rightarrow B$  ;  $\Delta H = -40 \text{ kJ}$  ;  $T\Delta S = -100 \text{ kJ}$   
 (b).  $P \rightarrow Q$  ;  $\Delta H = -80 \text{ kJ}$  ;  $T\Delta S = 10 \text{ kJ}$   
 (c).  $X \rightarrow Y$  ;  $\Delta H = 30 \text{ kJ}$  ;  $T\Delta S = 120 \text{ kJ}$   
 (d).  $M \rightarrow N$  ;  $\Delta H = -50 \text{ kJ}$  ;  $T\Delta S = -150 \text{ kJ}$   
 (e).  $C \rightarrow D$  ;  $\Delta H = 100 \text{ kJ}$  ;  $T\Delta S = 40 \text{ kJ}$

అక్షణమే జరిగే చర్యలు

Options :

1. ✘ (a), (d), (e)

2. ✘ (a), (d)

3. ✔ (b), (c)

4. ✘ (a), (e)

Question Number : 15 Question Id : 79840723451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The vapor pressure of a liquid at 300 K and 400 K is 100 mm and 1000 mm respectively. Its molar heat of vaporization (in  $\text{kJ mol}^{-1}$ ) is

Options :

1. ✔ 22.976

2. ✘ 4.5953

3. ✘ 45.953

4. ✘ 2.2976

Question Number : 15 Question Id : 79840723451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

300 K మరియు 400 K ల వద్ద ఒక ద్రవం యొక్క బాష్పపీడనం వరుసగా 100 mm మరియు 1000 mm. దాని మోలార్ బాష్పీభవనోష్ణము  $\text{kJ mol}^{-1}$  లలో

Options :

1. ✔ 22.976

2. ✘ 4.5953

3. ✘ 45.953

4. ✘ 2.2976

Question Number : 16 Question Id : 79840723452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which one of the following is not a Maxwell's relation?

Options :

1. ✘  $\left(\frac{\partial T}{\partial V}\right)_S = -\left(\frac{\partial P}{\partial S}\right)_V$

2. ✘  $\left(\frac{\partial V}{\partial S}\right)_P = \left(\frac{\partial T}{\partial P}\right)_S$

3. ✘  $\left(\frac{\partial S}{\partial P}\right)_T = -\left(\frac{\partial V}{\partial T}\right)_P$

4. ✔  $\left(\frac{\partial S}{\partial V}\right)_T = -\left(\frac{\partial P}{\partial T}\right)_V$

Question Number : 16 Question Id : 79840723452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వానిలో మాక్స్ వెల్ సంబంధము కానిది ఏది ?

Options :

1. ✘  $\left(\frac{\partial T}{\partial V}\right)_S = -\left(\frac{\partial P}{\partial S}\right)_V$

2. ✘  $\left(\frac{\partial V}{\partial S}\right)_P = \left(\frac{\partial T}{\partial P}\right)_S$

3. ✘  $\left(\frac{\partial S}{\partial P}\right)_T = -\left(\frac{\partial V}{\partial T}\right)_P$

4. ✔  $\left(\frac{\partial S}{\partial V}\right)_T = -\left(\frac{\partial P}{\partial T}\right)_V$

Question Number : 17 Question Id : 79840723453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The equilibrium constant ( $K_p$ ) of a reaction become ten times on increasing the temperature from 400 K to 600 K. What is its approximate  $\Delta H^0$  (in  $\text{kJ mol}^{-1}$ )? ( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ )

Options :

1. ✔ 23

2. ✘ 0.016

3. ✘ 0.000016

4. ✘ 230

Question Number : 17 Question Id : 79840723453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక చర్య సమతాస్థితి స్థిరాంకం ( $K_p$ ), 400 K నుండి 600 K కు ఉష్ణోగ్రత పెరిగినప్పుడు

పదిరెట్లవుతుంది. ఉజ్జాయింపుగా దాని  $\Delta H^0$  ( $\text{kJ mol}^{-1}$  లలో) ఎంత ? ( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ )

Options :

1. ✔ 23

2. ✘ 0.016

3. ✘ 0.000016

4. ✘ 230

Question Number : 18 Question Id : 79840723454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify the correct statements from the following.

- (a). Partial molar free energy is designated as chemical potential.
- (b). At the melting point, the chemical potentials of substance in solid phase and in the liquid phase are same.
- (c). At the boiling point, the chemical potentials of a substance in the liquid phase and gaseous phases are same.

Options :

1. ✘ (a), (b)

2. ✘ (b), (c)

3. ✘ (a), (c)

4. ✔ (a), (b), (c).

Question Number : 18 Question Id : 79840723454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వానిలో సరియైన వివరణలను గుర్తించండి.

అ) పాక్షిక మోలార్ స్వేచ్ఛా శక్తిని రసాయన శక్తి అంటారు

ఆ) ఘనప్రావస్థ మరియు ద్రవ ప్రావస్థలలో ఒక పదార్థపు రసాయన శక్తులు ద్రవీభవన స్థానం వద్ద సమానంగా ఉంటాయి

ఇ) ద్రవప్రావస్థ మరియు వాయు ప్రావస్థలలో ఒక పదార్థపు రసాయన శక్తులు భాష్పీభవన స్థానం వద్ద సమానంగా ఉంటాయి

Options :

1. ✘ (a), (b)

2. ✘ (b), (c)

3. ✘ (a), (c)

4. ✔ (a), (b), (c).

Question Number : 19 Question Id : 79840723455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

At 27 °C a non-volatile solute is dissolved in water to form a dilute solution. Its elevation in boiling point ( $\Delta T_b$ ) is 0.75°. Calculate its  $\Delta T_f$ . ( $K_b = 0.52 \text{ K kg mol}^{-1}$  ;  $K_f = 1.86 \text{ K kg mol}^{-1}$ )

Options :

1. ✓ 2.68<sup>0</sup>
2. ✘ 1.34<sup>0</sup>
3. ✘ 1.289<sup>0</sup>
4. ✘ 0.1289<sup>0</sup>

Question Number : 19 Question Id : 79840723455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

27<sup>0</sup>C వద్ద విలీన ద్రావణాన్ని ఏర్పరచుటకు ఒక అబ్జాప్యశీల ద్రావితం నీటిలో కరిగించబడినది. దాని భాష్పీభవన ఉన్నతి ( $\Delta T_b$ ) 0.75<sup>0</sup>. దాని  $\Delta T_f$  ను లెక్కించండి. ( $K_b = 0.52 \text{ K kg mol}^{-1}$  ;  $K_f = 1.86 \text{ K kg mol}^{-1}$ )

Options :

1. ✓ 2.68<sup>0</sup>
2. ✘ 1.34<sup>0</sup>
3. ✘ 1.289<sup>0</sup>
4. ✘ 0.1289<sup>0</sup>

Question Number : 20 Question Id : 79840723456 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

At 27<sup>0</sup>C one mole of pure liquid A is mixed with one mole of pure liquid B to form an ideal solution. What is  $\Delta S_{\text{mix}}$  (in  $\text{J K}^{-1}$ ) of the solution?

Options :

1. ✓ 5.763
2. ✘ -1729.159
3. ✘ 1729.159
4. ✘ 0.0

Question Number : 20 Question Id : 79840723456 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక ఆదర్శ ద్రావణాన్ని తయారు చేయుటకు, 27<sup>0</sup>C వద్ద ఒక మోల్ 'A' అను పరిశుద్ధ ద్రవాన్ని, ఒక మోల్ 'B' అను పరిశుద్ధ ద్రవానికి కలపడమైనది. ఆ ద్రావణపు  $\Delta S_{\text{mix}}$  ( $\text{J K}^{-1}$  లలో) ఎంత ?

Options :

1. ✓ 5.763
2. ✘ -1729.159
3. ✘ 1729.159
4. ✘ 0.0



Question Number : 21 Question Id : 79840723457 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The mole fraction of  $\text{CO}_2$  in one liter of aqueous solution is  $1.423 \times 10^{-5}$ . The partial pressure of  $\text{CO}_2$  over the solution is 760 torr. What is the Henry constant (in torr) for water?

Options :

1. ✘  $5.34 \times 10^5$
2. ✔  $5.34 \times 10^7$
3. ✘  $5.34 \times 10^{-7}$
4. ✘  $1.87 \times 10^{-8}$

Question Number : 21 Question Id : 79840723457 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ಒಕ ಲೀಟರು ಜಲ ದ್ರಾವಣಂಲ್  $\text{CO}_2$  ಮೋಲ್ ಭಾಗಂ  $1.423 \times 10^{-5}$ . ದ್ರಾವಣಂ ಮೀದ  $\text{CO}_2$  ಪಾಕ್ಷಿಕ ಪೀಡನಂ 760 ಟಾರ್ ಲು .  
ನೀಟಿ ಪಾನ್ತ್ರಿ ಸ್ತೀರಾಂಕಮು (ಟಾರ್ ಲಲ್) ಎಂತ ?

Options :

1. ✘  $5.34 \times 10^5$
2. ✔  $5.34 \times 10^7$
3. ✘  $5.34 \times 10^{-7}$
4. ✘  $1.87 \times 10^{-8}$

Question Number : 22 Question Id : 79840723458 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

One mole of liquid A is mixed with one mole of liquid b to form an ideal solution. Identify the correct set of  $\Delta H_{\text{mix}}$ ,  $\Delta V_{\text{mix}}$ ,  $\Delta G_{\text{mix}}$ ,  $\Delta S_{\text{mix}}$  for this solution.

Options :

- |      | $\Delta H_{\text{mix}}$ | $\Delta V_{\text{mix}}$ | $\Delta G_{\text{mix}}$ | $\Delta S_{\text{mix}}$ |
|------|-------------------------|-------------------------|-------------------------|-------------------------|
| 1. ✘ | Zero                    | positive                | negative                | negative                |
| 2. ✔ | zero                    | zero                    | negative                | positive                |
| 3. ✘ | positive                | zero                    | positive                | negative                |

$\Delta H_{mix}$  $\Delta V_{mix}$  $\Delta G_{mix}$  $\Delta S_{mix}$ 

negative

zero

negative

positive

4. ✘

Question Number : 22 Question Id : 79840723458 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక ఆదర్శ ద్రావణాన్ని తయారు చేయుటకు, ఒక మోల్ 'A' అను ద్రవాన్ని, ఒక మోల్ 'B' అను ద్రవానికి

కలపడమైనది. ఆ ద్రావణపు  $\Delta H_{mix}$ ,  $\Delta V_{mix}$ ,  $\Delta G_{mix}$ ,  $\Delta S_{mix}$  ల సరియైన సమితి

Options :

 $\Delta H_{mix}$  $\Delta V_{mix}$  $\Delta G_{mix}$  $\Delta S_{mix}$ 

సున్న

ధనాత్మకం

ఋణాత్మకం

ఋణాత్మకం

1. ✘

 $\Delta H_{mix}$  $\Delta V_{mix}$  $\Delta G_{mix}$  $\Delta S_{mix}$ 

సున్న

సున్న

ఋణాత్మకం

ధనాత్మకం

2. ✔

 $\Delta H_{mix}$  $\Delta V_{mix}$  $\Delta G_{mix}$  $\Delta S_{mix}$ 

ధనాత్మకం

సున్న

ధనాత్మకం

ఋణాత్మకం

3. ✘

 $\Delta H_{mix}$  $\Delta V_{mix}$  $\Delta G_{mix}$  $\Delta S_{mix}$ 

ఋణాత్మకం

సున్న

ఋణాత్మకం

ధనాత్మకం

4. ✘

Question Number : 23 Question Id : 79840723459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct equation for rotational partition function ( $q_{rot}$ ) is

Options :

$$q_{rot} = \frac{\sigma hcB}{kT}$$

1. ✘

$$q_{rot} = \frac{kT}{\sigma hcB}$$

2. ✔

$$q_{rot} = \frac{\sigma hcB}{k}$$

3. ✘

$$q_{rot} = \frac{k}{\sigma hcB}$$

4. ✘

Question Number : 23 Question Id : 79840723459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

భ్రమణ వితరణ ప్రమేయం కు సరియైన సమీకరణం :

Options :

1. ✘  $q_{rot} = \frac{\sigma hcB}{kT}$

2. ✔  $q_{rot} = \frac{kT}{\sigma hcB}$

3. ✘  $q_{rot} = \frac{\sigma hcB}{k}$

4. ✘  $q_{rot} = \frac{k}{\sigma hcB}$

Question Number : 24 Question Id : 79840723460 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The ground and first excited states of an atom are  $^2P_{3/2}$  and  $^2P_{1/2}$ , respectively. If excited state lies at  $0.176 \times 10^{-19}$  J above the ground state, the electronic partition function ( $q_{ele}$ ) of this atom at 1000 K is (assume  $\epsilon_0 = 0.0$  J;  $k = 1.38 \times 10^{-23}$  JK $^{-1}$ ).

Options :

1. ✘  $q_{ele} = 4 + \exp[-1.28]$

2. ✘  $q_{ele} = 2 + 2 \exp[-1.28]$

3. ✔  $q_{ele} = 4 + 2 \exp[-1.28]$

4. ✘  $q_{ele} = 2 + 4 \exp[-1.28]$

Question Number : 24 Question Id : 79840723460 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక పరమాణువు భూ మరియు ప్రథమ ఉత్తేజక స్థితులు వరుసగా  $^2P_{3/2}$  మరియు  $^2P_{1/2}$ . భూ స్థితిపైన ఉత్తేజక స్థితి  $0.176 \times 10^{-19}$  J ల వద్ద ఉన్నట్లయితే , 1000 K వద్ద ఆ పరమాణువు ఎలక్ట్రానిక్ వితరణ ప్రమేయం ( $q_{ele}$ ): ( $\epsilon_0 = 0.0$  J;  $k = 1.38 \times 10^{-23}$  JK $^{-1}$  గా భావించండి ).

Options :

1. ✘  $q_{ele} = 4 + \exp[-1.28]$

2. ✘  $q_{ele} = 2 + 2 \exp[-1.28]$

3. ✔  $q_{ele} = 4 + 2 \exp[-1.28]$

4. ✘  $q_{ele} = 2 + 4 \exp[-1.28]$

Question Number : 25 Question Id : 79840723461 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

For helium gas, the molecular partition function ( $q$ ) is given by

Options :

1. ✘  $q = q_{ele} + q_{tr}$

2. ✔  $q = q_{ele} \cdot q_{tr}$

3. ✘  $q = \frac{q_{ele}}{q_{tr}}$

4. ✘  $q = \frac{q_{tr}}{q_{ele}}$

Question Number : 25 Question Id : 79840723461 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

హీలియం అనువితరణ ప్రమేయం ( $q$ ) ఇచ్చునది

Options :

1. ✘  $q = q_{ele} + q_{tr}$

2. ✔  $q = q_{ele} \cdot q_{tr}$

3. ✘  $q = \frac{q_{ele}}{q_{tr}}$

4. ✘  $q = \frac{q_{tr}}{q_{ele}}$

Question Number : 26 Question Id : 79840723462 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

What is the translational entropy (in  $\text{J K}^{-1} \text{mol}^{-1}$ ) of He (molar mass =  $4 \text{ g mol}^{-1}$ ) at 300 K and 1 atm pressure? ( $R = 8.314 \text{ J K}^{-1} \text{mol}^{-1}$ )

Options :

1. ✘ 53

2. ✘ 5.3

3. ✔ 126

4. ✘ 12.6

Question Number : 26 Question Id : 79840723462 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

300 K మరియు 1 atm పీడనం వద్ద He (మోలార్ ద్రవ్యరాశి  $4 \text{ g mol}^{-1}$ ) స్థానాంతర ఎంట్రోపీ ఎంత ?  
( $R = 8.314 \text{ J K}^{-1} \text{mol}^{-1}$ )

Options :

1. ✘ 53
2. ✘ 5.3
3. ✔ 126
4. ✘ 12.6

Question Number : 27 Question Id : 79840723463 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The Debye temperature ( $\Theta_D$ ) of a metal is 400 K. What is its  $C_V$  (in cal. mol<sup>-1</sup> K<sup>-1</sup>) at a temperature of 100 K.

Options :

1. ✔ 7.3
2. ✘ 73
3. ✘ 0.73
4. ✘ 730

Question Number : 27 Question Id : 79840723463 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక లోహపు డిబై ఉష్ణోగ్రత ( $\Theta_D$ ) 400 K. 100 K వద్ద ఉష్ణోగ్రత వద్ద దాని  $C_V$  (cal. mol<sup>-1</sup> K<sup>-1</sup> లలో ) ఎంత .

Options :

1. ✔ 7.3
2. ✘ 73
3. ✘ 0.73
4. ✘ 730

Question Number : 28 Question Id : 79840723464 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

According to Dulong and Petit, the heat capacity (in cal mol<sup>-1</sup> K<sup>-1</sup>) of a solid element at room temperature is approximately equal to

Options :

1. ✘ 2
2. ✘ 4
3. ✔ 6
4. ✘ 8

Question Number : 28 Question Id : 79840723464 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

డ్యూలాంగ్ మరియు పేటిట్ ప్రకారము గది ఉష్ణోగ్రత వద్ద ఒక ఘన మూలకపు ఉష్ణ ధారణ ( $\text{cal mol}^{-1} \text{K}^{-1}$ లలో)

ఉజ్జాయింపుగా

Options :

1. ✘ 2
2. ✘ 4
3. ✔ 6
4. ✘ 8

Question Number : 29 Question Id : 79840723465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A solid follows Einstein equation of heat capacity at all temperatures. The  $C_V$  of this solid at very low temperatures and very high temperatures is respectively ( $R = \text{gas constant}$ )

Options :

1. ✘ 0, 0
2. ✘  $3R, 3R$
3. ✔ 0,  $3R$
4. ✘  $3R, 0$

Question Number : 29 Question Id : 79840723465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక ఘనపదార్థపు అన్ని ఉష్ణోగ్రతల వద్ద ఐన్ స్టీన్ ఉష్ణధారణ సమీకరణాన్ని పాటిస్తుంది. అతి తక్కువ మరియు అతి ఎక్కువ ఉష్ణోగ్రతల వద్ద ఆ ఘనపదార్థపు  $C_V$  వరుసగా ( $R = \text{వాయు స్థిరాంకము}$ )

Options :

1. ✘ 0, 0
2. ✘  $3R, 3R$
3. ✔ 0,  $3R$
4. ✘  $3R, 0$

Question Number : 30 Question Id : 79840723466 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The energy difference between  $v=0$  and  $v=1$  of a diatomic molecule is  $3.975 \times 10^{-20} \text{ J}$ . Using Boltzmann distribution for non-interacting particles, find out the ratio,  $\frac{N_{v=1}}{N_{v=0}}$  at 1000 K. ( $k = 1.38 \times 10^{-23} \text{ J K}^{-1}$ ;  $v = \text{vibrational quantum number}$ ,  $N_{v=0} = \text{number of molecules in } v = 0 \text{ state}$ ).

Options :

1. ✓  $\frac{N_{v=1}}{N_{v=0}} = \exp(-2.88)$

2. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(2.88)$

3. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(-28.8)$

4. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(28.8)$

Question Number : 30 Question Id : 79840723466 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఒక ద్వి పరమాణుక అణువు యొక్క  $v=0$  మరియు  $v=1$  ల మధ్య శక్తి తేడ  $3.975 \times 10^{-20}$  J. బోల్ట్జ్మాన్ అస్యోన్య

కణాల వితరణను పయోగించి, 1000 K వద్ద  $\frac{N_{v=1}}{N_{v=0}}$  నిష్పత్తి ని కనుగొనండి ( $k = 1.38 \times 10^{-23}$  J K<sup>-1</sup>;  $v =$  కంపన

క్వాంటం సంఖ్య),  $N_{v=0} = v=0$  స్థితిలోని అణువుల సంఖ్య).

Options :

1. ✓  $\frac{N_{v=1}}{N_{v=0}} = \exp(-2.88)$

2. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(2.88)$

3. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(-28.8)$

4. ✗  $\frac{N_{v=1}}{N_{v=0}} = \exp(28.8)$

Question Number : 31 Question Id : 79840723467 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

The aqueous solution of KCl is used in the salt bridge. This is because

Options :

1. ✗ KCl is an ionic compound

2. ✓ the transference numbers of K<sup>+</sup> and Cl<sup>-</sup> are nearly same

3. ✗ The liquid junction potential due to KCl is very large

4. ✘ KCl is soluble in water

Question Number : 31 Question Id : 79840723467 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

KCl జలద్రవణాన్ని లవణ వారధిలో ఉపయోగిస్తారు. ఎందుకంటే

Options :

1. ✘ KCl అయానిక పదార్థము

2. ✔  $K^+$  మరియు  $Cl^-$  బదలాయింపు సంఖ్యలు దాదాపు ఒకటి

3. ✘ KCl వల్ల ద్రవసంధితల శక్తము చాల ఎక్కువ

4. ✘ KCl నీటిలో కరుగుతుంది

Question Number : 32 Question Id : 79840723468 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

What is the liquid junction potential ( $E_\ell$ ) (in volts) between two solutions of AB having mean activities of 0.01 and 0.001, respectively at 25 °C. The transference number of  $A^+$  is 0.5. ( $RT/F = 0.059$ )

Options :

1. ✘  $E_\ell = 0.059$

2. ✘  $E_\ell = -0.059$

3. ✔  $E_\ell = 0$

4. ✘  $E_\ell = 1$

Question Number : 32 Question Id : 79840723468 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

25 °C ల వద్ద, వరుసగా 0.01 మరియు 0.001 సగటు క్రియాశీలత లున్న AB యొక్క రెండు ద్రావణాల

మధ్యద్రవసంధితల శక్తము ( $E_\ell$ ) (వోల్ట్ లలో) ఎంత?  $A^+$  బదలాయింపు సంఖ్య 0.5. ( $RT/F = 0.059$ )

Options :

1. ✘  $E_\ell = 0.059$

2. ✘  $E_\ell = -0.059$

3. ✔  $E_\ell = 0$

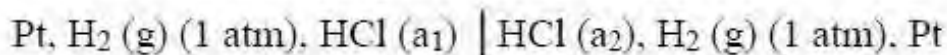
4. ✘  $E_\ell = 1$



Question Number : 33 Question Id : 79840723469 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The concentration cell with transference is shown below



The emf of cell ( $E_{w,t}$ ) is

Options :

1. ✘ 
$$E_{w,t} = \frac{RT}{F} \ln \frac{a_2}{a_1}$$

2. ✔ 
$$E_{w,t} = t_- \frac{RT}{F} \ln \frac{a_2}{a_1}$$

3. ✘ 
$$E_{w,t} = t_+ \frac{RT}{F} \ln \frac{a_2}{a_1}$$

4. ✘ 
$$E_{w,t} = (t_- + t_+) \frac{RT}{F} \ln \frac{a_2}{a_1}$$

Question Number : 33 Question Id : 79840723469 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

బదలాయింపు గాఢతాఘటము క్రింది చూపబడినది Pt, H<sub>2</sub> (పా) (1 atm), HCl (a<sub>1</sub>) | HCl (a<sub>2</sub>), H<sub>2</sub> (పా) (1 atm), Pt ఘటము emf ( $E_{w,t}$ ) :

Options :

1. ✘ 
$$E_{w,t} = \frac{RT}{F} \ln \frac{a_2}{a_1}$$

2. ✔ 
$$E_{w,t} = t_- \frac{RT}{F} \ln \frac{a_2}{a_1}$$

3. ✘ 
$$E_{w,t} = t_+ \frac{RT}{F} \ln \frac{a_2}{a_1}$$

4. ✘ 
$$E_{w,t} = (t_- + t_+) \frac{RT}{F} \ln \frac{a_2}{a_1}$$

Question Number : 34 Question Id : 79840723470 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

At 27 °C, the  $E_{\text{Cell}}$  of the following cell is 0.029 V Ag, 0.1 M KCl saturated with AgCl || SCE

What is the  $K_{\text{SP}}$  of AgCl? ( $E^0_{\text{Ag}^+/\text{Ag}} = 0.80 \text{ V}$  and  $E_{\text{SCE}} = 0.242 \text{ V}$ )

Options :

1. ✘  $10^{-19}$
2. ✔  $10^{-10}$
3. ✘  $10^{-1}$
4. ✘  $10^{-8}$

Question Number : 34 Question Id : 79840723470 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

27 °C వద్ద, క్రింది ఘటం  $E_{\text{cell}}$  0.029 V, Ag, AgCl లో సంతృప్తం చేయబడిన 0.1 M KCl || SCE

AgCl,  $K_{\text{SP}}$  ఎంత? ( $E^0_{\text{Ag}^+/\text{Ag}} = 0.80$  V మరియు  $E_{\text{SCE}} = 0.242$  V)

Options :

1. ✘  $10^{-19}$
2. ✔  $10^{-10}$
3. ✘  $10^{-1}$
4. ✘  $10^{-8}$

Question Number : 35 Question Id : 79840723471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Three compounds, A, B and C follow Debye-Huckel limiting law. A plot of  $\log \gamma_{\pm}$  (y-axis) versus square root of ionic strength (x-axis) gave three straight lines starting from the origin. The slopes of these straight lines are in the ratio of 2 : 1 : 3 for A, B, C, respectively. A, B and C are respectively:

Options :

1. ✘ BaCl<sub>2</sub>, AlCl<sub>3</sub>, NaCl
2. ✔ BaCl<sub>2</sub>, NaCl, AlCl<sub>3</sub>
3. ✘ AlCl<sub>3</sub>, BaCl<sub>2</sub>, NaCl
4. ✘ NaCl, BaCl<sub>2</sub>, AlCl<sub>3</sub>

Question Number : 35 Question Id : 79840723471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A, B మరియు C అను మూడు పదార్థాలు డీబై - హుకెల్ అవధి నియమాన్ని పాటిస్తాయి.  $\log \gamma_{\pm}$  (y-తలం) అయానిక గాఢత వర్గ మూలానికి (x-తలం) గీసిన గ్రాఫ్ మూల బిందువు నుండి మొదలయ్యే మూడు సరళ రేఖల నిచ్చింది. ఈ సరళ రేఖల వాలు (slope) ల నిష్పత్తి A, B, C, లకు వరుసగా 2 : 1 : 3. A, B మరియు C లు వరుసగా :

Options :

1. ✘  $\text{BaCl}_2, \text{AlCl}_3, \text{NaCl}$
2. ✔  $\text{BaCl}_2, \text{NaCl}, \text{AlCl}_3$
3. ✘  $\text{AlCl}_3, \text{BaCl}_2, \text{NaCl}$
4. ✘  $\text{NaCl}, \text{BaCl}_2, \text{AlCl}_3$

Question Number : 36 Question Id : 79840723472 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

What is the value of  $\log \gamma_{\pm}$  for 0.01 molal KCl solution?

Options :

1. ✘ - 0.509
2. ✘ + 0.509
3. ✔ - 0.0509
4. ✘ + 0.0509

Question Number : 36 Question Id : 79840723472 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

0.01మోలాల KCl ద్రావణపు  $\log \gamma_{\pm}$  విలువ ఎంత ?

Options :

1. ✘ - 0.509
2. ✘ + 0.509
3. ✔ - 0.0509
4. ✘ + 0.0509

Question Number : 37 Question Id : 79840723473 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

According to Debye-Huckel-Onsager equation, a plot between x and y gives a straight line with negative slope for strong electrolyte. x and y are respectively:

(C = concentration of electrolyte;  $\Lambda_m$  = molar conductance)

Options :

1. ✘  $x$   $y$   
 $C$   $\Lambda_m$   
 $x$   $y$   
2. ✘  $\sqrt{C}$   $\sqrt{\Lambda_m}$   
 $x$   $y$   
3. ✘  $C$   $\sqrt{\Lambda_m}$   
 $x$   $y$   
4. ✔  $\sqrt{C}$   $\Lambda_m$

Question Number : 37 Question Id : 79840723473 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

డీటై -హుకేల్ -బన్ సాగర్ సమీకరణం ప్రకారం బలమైన విద్యుద్విశ్లేషణ పదార్థానికి  $x$  మరియు  $y$  ల మధ్య గీసిన గ్రాఫ్ ఋణాత్మక వాలు వున్న సరళ రేఖను ఇస్తుంది.  $x$  మరియు  $y$  వరుసగా :

( $C$  = విద్యుద్విశ్లేషణ పదార్థ గాఢత ;  $\Lambda_m$  = మోలార్ వాహకత)

Options :

1. ✘  $x$   $y$   
 $C$   $\Lambda_m$   
2. ✘  $x$   $y$   
 $\sqrt{C}$   $\sqrt{\Lambda_m}$   
3. ✘  $x$   $y$   
 $C$   $\sqrt{\Lambda_m}$   
4. ✔  $x$   $y$   
 $\sqrt{C}$   $\Lambda_m$

Question Number : 38 Question Id : 79840723474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Standard electrode potential of a metal (M) is defined as

Options :

1. ✘ the potential developed on M when it is in contact with a solution of  $M^+$  of any concentration  
2. ✘ the energy required to deposit one equivalent of metal (M) on the electrode. M

3. ✘ the current required to deposit one equivalent of metal (M) on the electrode, M
- the potential developed on M, when it is in contact with a solution of  $M^+$  of unit molar
4. ✔ concentration

Question Number : 38 Question Id : 79840723474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఒక లోహం (M) ప్రమాణ ఎలక్ట్రోడ్ పోటెన్షియల్ ను ఇలా నిర్వచిస్తారు :

Options :

1. ✘ M,  $M^+$  అయాన్ ద్రావణములో ( ఏ గాఢత అయిననూ) ఉన్నప్పుడు దాని మీద ఏర్పడు పోటెన్షియల్
2. ✘ ఎలక్ట్రోడ్, M మీద ఒక తుల్యాంకపు లోహం (M) ను నిక్షేపించుటకు అవసరమగు శక్తి
3. ✘ ఎలక్ట్రోడ్, M మీద ఒక తుల్యాంకపు లోహం (M) ను నిక్షేపించుటకు అవసరమగు విద్యుత్ , (M).
4. ✔ M, ఒక మోలార్ గాఢత గల  $M^+$  అయాన్ ద్రావణంలో ఉన్నప్పుడు దాని మీద ఏర్పడు పోటెన్షియల్

Question Number : 39 Question Id : 79840723475 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

What is the cell emf (in V) of the following cell at 25 °C ( $E^{\circ}_{\text{Cell}} = 1.53 \text{ V}$ )

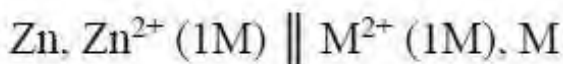


Options :

1. ✔ 1.53
2. ✘ 1.471
3. ✘ 1.589
4. ✘ 1.412

Question Number : 39 Question Id : 79840723475 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

25 °C వద్ద క్రింది ఇవ్వబడిన ఘటం emf ( V లలో ) ఎంత ? ( $E^{\circ}_{\text{Cell}} = 1.53 \text{ V}$ )



Options :

1. ✔ 1.53
2. ✘ 1.471

3. ✖ 1.589

4. ✖ 1.412

Question Number : 40 Question Id : 79840723476 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

If  $\theta$  is the fraction of ions that get associated into ion pairs, at very large dilution, the ion-association constant ( $K_A$ ) is given by ( $C = \text{concentration}$ )

Options :

1. ✖  $K_A \approx \theta C$

2. ✖  $K_A = 1/\theta C$

3. ✔  $K_A \approx \theta/C$

4. ✖  $K_A = C/\theta$

Question Number : 40 Question Id : 79840723476 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

అయాన్ జంటలుగా సహచరించుకునే అయాన్ ల భాగము  $\theta$  అయినట్లయితే, అత్యధిక విలీనీకరణం వద్ద, అయాన్

సహచర్య స్థిరాంకము ( $K_A$ ) : ( $C = \text{గాఢత}$ )

Options :

1. ✖  $K_A \approx \theta C$

2. ✖  $K_A = 1/\theta C$

3. ✔  $K_A \approx \theta/C$

4. ✖  $K_A = C/\theta$

Question Number : 41 Question Id : 79840723477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

If  $\hat{A}$  and  $\hat{B}$  are  $x^3$  and  $\frac{d}{dx}$ , respectively, then  $[\hat{A}, \hat{B}]$  is

Options :

1. ✖  $-3x$

2. ✖  $3x$

3. ✖  $3x^2$

4. ✔  $-3x^2$

Question Number : 41 Question Id : 79840723477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$\hat{A}$  మరియు  $\hat{B}$  లు వరుసగా  $x^3$  మరియు  $\frac{d}{dx}$ , అయితే, అప్పుడు  $[\hat{A}, \hat{B}]$

Options :

1. ✘  $-3x$
2. ✘  $3x$
3. ✘  $3x^2$
4. ✔  $-3x^2$

Question Number : 42 Question Id : 79840723478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A particle of mass 'm', present in a one-dimensional box of length 10 cm, emits energy equal to  $\frac{h^2}{160m}$  when it jumps from  $(n+1)$  to  $n$  state. What is the energy required for the same particle to excite from  $(n+1)$  to  $(n+2)$  state?

Options :

1. ✘  $\frac{5h^2}{80m}$
2. ✘  $\frac{7h^2}{80m}$
3. ✔  $\frac{7h^2}{800m}$
4. ✘  $\frac{7h}{800m}$

Question Number : 42 Question Id : 79840723478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

10 cm పొడవు గల ఏక దిశాత్మక డబ్బా లోని 'm' ద్రవ్యరాశి గల కణం  $n$  స్థితి నుండి  $(n+1)$  కి వెళ్ళినప్పుడు

ఉద్ధారించు శక్తి  $\frac{h^2}{160m}$  కు సమానం. అదే కణం  $(n+1)$  స్థితి నుండి  $(n+2)$  సతికి వెళ్ళు టానికి అవసరమగు శక్తి ఎంత ?

Options :

1. ✘  $\frac{5h^2}{80m}$
2. ✘  $\frac{7h^2}{80m}$

3. ✓  $\frac{7h^2}{800m}$

4. ✘  $\frac{7h}{800m}$

Question Number : 43 Question Id : 79840723479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

If  $\Psi$  is a normalized well behaved trial wave function of a system and  $E_0$  is its ground state energy, then the correct equation is:

( $\hat{H}$  = Hamiltonian operator;  $\Psi^*$  = complex conjugate of  $\Psi$ )

Options :

1. ✘  $\langle E \rangle = \int \hat{H} \Psi d\tau = E_0$

2. ✓  $\langle E \rangle = \int \Psi^* \hat{H} \Psi d\tau \geq E_0$

3. ✘  $\langle E \rangle = \int \Psi^* \hat{H} \Psi d\tau = \infty$

4. ✘  $\langle E \rangle = \int \Psi^* \Psi d\tau = E$

Question Number : 43 Question Id : 79840723479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక వ్యవస్థ కు సాధారణీకృత సక్రమ ప్రవర్తన ప్రయత్న తరంగ ప్రమేయం  $\Psi$  అయ్యి మరియు దాని భూ స్థితి శక్తి  $E_0$  అయితే , సరియైన సమీకరణం:

( $\hat{H}$  = హామిల్టోనియన్ అపరేటర్ :  $\Psi^*$  =  $\Psi$  యొక్క సక్లిష్ట సంయుగ్మం )

Options :

1. ✘  $\langle E \rangle = \int \hat{H} \Psi d\tau = E_0$

2. ✓  $\langle E \rangle = \int \Psi^* \hat{H} \Psi d\tau \geq E_0$

3. ✘  $\langle E \rangle = \int \Psi^* \hat{H} \Psi d\tau = \infty$

4. ✘  $\langle E \rangle = \int \Psi^* \Psi d\tau = E$

Question Number : 44 Question Id : 79840723480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66



$e^{10x}$  is an eigen function of operator,  $\frac{d}{dx}$ . What is the eigen value?

Options :

1. ✘  $e^{10x}$
2. ✘  $10x$
3. ✔  $10$
4. ✘  $10 e^{10x}$

Question Number : 44 Question Id : 79840723480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$\frac{d}{dx}$  ఆపరేటర్ యొక్క ఐగెన్ ఫంక్షన్  $e^{10x}$  ఐగెన్ విలువ ఎంత?

Options :

1. ✘  $e^{10x}$
2. ✘  $10x$
3. ✔  $10$
4. ✘  $10 e^{10x}$

Question Number : 45 Question Id : 79840723481 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify correct statements from the following:

- (a) The eigen values of Hermitian operator are always real
- (b) The eigen values of Hermitian operator are always imaginary
- (c) Two eigen functions of a Hermitian operator with different eigen values are orthogonal
- (d) The 1s and 2s wavefunctions of H-atom are orthogonal to each other

Options :

1. ✘ a, b, d
2. ✘ a, b, c, d
3. ✘ b, d
4. ✔ a, c, d

Question Number : 45 Question Id : 79840723481 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రిందివాటిలో సరియైన వివరణ లను గుర్తించండి:

Options :

1. ✘ హెర్మిటియన్ ఆపరేటర్ ఐగెన్ విలువలు ఎల్లప్పుడూ వాస్తవమైనవి

2. ✘ హెర్మిటియన్ ఆపరేటర్ ఐగెన్ విలువలు ఎల్లప్పుడూ ఊహాజనితమైనవి

3. ✘

వేర్వేరు ఐగెన్ విలువలున్న, ఒక హెర్మిటియన్ ఆపరేటర్ యొక్క రెండు ఐగెన్ ప్రమేయాలు లంబకోణీయం లో ఉంటాయి.

4. ✔

H- పరమాణువా యొక్క 1s మరియు 2s తరంగ ప్రమేయాలు ఒకదానికొకటి లంబకోణీయం లో ఉంటాయి.

Question Number : 46 Question Id : 79840723482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The radial part of hydrogenic wave function is given as  $x(y-r)e^{-z}$  (x, y and z are constants). This function is then identifiable as

Options :

1. ✘ 1s

2. ✔ 2s

3. ✘ 2p

4. ✘ 3s

Question Number : 46 Question Id : 79840723482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

వైద్యజనిక తరంగ ప్రమేయపు త్రిజ్య (radial) భాగాన్ని  $x(y-r)e^{-z}$  గా సూచిస్తారు (x, y మరియు z లు స్థిరాంకాలు). ఈ ప్రమేయాన్ని దేనిగా గుర్తిస్తారు

Options :

1. ✘ 1s

2. ✔ 2s

3. ✘ 2p

4. ✘ 3s

Question Number : 47 Question Id : 79840723483 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The energy of particle of mass 'm' present in a particular energy level in cubical box of length 'a' cm is  $\frac{7h^2}{4ma^2}$ . The degeneracy of the level is

Options :

1. ✘ 1
2. ✘ 3
3. ✘ 4
4. ✔ 6

Question Number : 47 Question Id : 79840723483 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

'a' cm పొడవున్న ఘనీయ డబ్బా (cubical box ) లో ఒక నిర్దిష్ట శక్తి స్థాయి లో ఉన్న 'm' ద్రవ్యరాశి గల కణపు

శక్తి  $\frac{7h^2}{4ma^2}$  స్థాయి అపబ్బత :

Options :

1. ✘ 1
2. ✘ 3
3. ✘ 4
4. ✔ 6

Question Number : 48 Question Id : 79840723484 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

A particle of mass 'm' present in a one-dimensional box of length 'a' cm is in n = 4 state. Its wave function becomes zero at x = 0, x = a and

Options :

1. ✘  $x = \frac{a}{3}; x = \frac{a}{2}; x = \frac{2a}{3}$
2. ✘  $x = \frac{a}{3}; x = \frac{2a}{3}$
3. ✔  $x = \frac{a}{4}; x = \frac{a}{2}; x = \frac{3a}{4}$
4. ✘  $x = \frac{a}{5}; x = \frac{2a}{5}; x = \frac{3a}{5}; x = \frac{4a}{5}$

Question Number : 48 Question Id : 79840723484 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

'a' cm పొడవున్న ఏకదిశాత్మక డబ్బా లోని 'm' ద్రవ్యరాశి గల కణం n = 4 స్థితిలో ఉన్నది. దాని తరంగ ప్రమేయం x = 0, x = a వద్ద సున్న అవుతుంది. దాని తరంగ ప్రమేయం సున్న అగు ఇతర విలువలు

Options :

1. ✖  $x = \frac{a}{3}; x = \frac{a}{2}; x = \frac{2a}{3}$

2. ✖  $x = \frac{a}{3}; x = \frac{2a}{3}$

3. ✔  $x = \frac{a}{4}; x = \frac{a}{2}; x = \frac{3a}{4}$

4. ✖  $x = \frac{a}{5}; x = \frac{2a}{5}; x = \frac{3a}{5}; x = \frac{4a}{5}$

Question Number : 49 Question Id : 79840723485 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which one of the following statements is correct?

( $E_{H_2}$  = bond dissociation energy of  $H_2$ ;  $E_{H_2^+}$  = bond dissociation energy of  $H_2^+$ ;  $\gamma_{H_2}$  = bond length of  $H_2$ ;  $\gamma_{H_2^+}$  = bond length of  $H_2^+$ ).

Options :

1. ✖  $E_{H_2} > E_{H_2^+}; \gamma_{H_2} > \gamma_{H_2^+}$

2. ✖  $E_{H_2} < E_{H_2^+}; \gamma_{H_2} < \gamma_{H_2^+}$

3. ✔  $E_{H_2} > E_{H_2^+}; \gamma_{H_2^+} > \gamma_{H_2}$

4. ✖  $E_{H_2} < E_{H_2^+}; \gamma_{H_2^+} > \gamma_{H_2}$

Question Number : 49 Question Id : 79840723485 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది వివరణలలో ఏది సరియైనది ?

( $E_{H_2}$  =  $H_2$  బంధ విమోచక శక్తి ;  $E_{H_2^+}$  =  $H_2^+$  బంధవిమోచక శక్తి ;  $\gamma_{H_2}$  =  $H_2$  బంధదైర్ఘ్యము ;  $\gamma_{H_2^+}$  =  $H_2^+$  బంధదైర్ఘ్యము).

Options :

1. ✖  $E_{H_2} > E_{H_2^+}; \gamma_{H_2} > \gamma_{H_2^+}$

2. ✖  $E_{H_2} < E_{H_2^+}; \gamma_{H_2} < \gamma_{H_2^+}$

3. ✔  $E_{H_2} > E_{H_2^+}; \gamma_{H_2^+} > \gamma_{H_2}$

4. ✖  $E_{H_2} < E_{H_1} ; \gamma_{H_1} > \gamma_{H_2}$

Question Number : 50 Question Id : 79840723486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which one of the following functions  $f(x)$  could be used as trial variation function for the particle in a one-dimensional box of length 'a'? (Note that the  $f(x)$  is zero outside the box and applies only inside the box).

Options :

1. ✖  $f(x) = x^2$

2. ✖  $f(x) = \cos \frac{\pi}{a} x$

3. ✔  $f(x) = -x^2 (a-x)^2$

4. ✖  $f(x) = x^3$

Question Number : 50 Question Id : 79840723486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రిందివాటిలో ఏ ప్రమేయం ,  $f(x)$  ను 'a' పొడవున్న ఏక దిశాత్మక డబ్బాలోని కణపు ప్రయత్న చర ప్రమేయం (trial variation function)గా ఉపయోగిస్తారు ? ( $f(x)$  డబ్బా వెలుపల 'సున్న' గా ఉంటుందని, డబ్బా లోపల మాత్రమే వర్తిస్తుందని గమనించగలరు ).

Options :

1. ✖  $f(x) = x^2$

2. ✖  $f(x) = \cos \frac{\pi}{a} x$

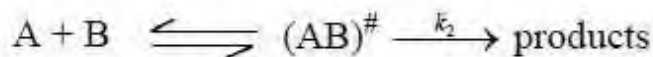
3. ✔  $f(x) = -x^2 (a-x)^2$

4. ✖  $f(x) = x^3$

Question Number : 51 Question Id : 79840723487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Consider a simple bimolecular reaction  $K^\#$



Where  $K^\#$  is equilibrium constant and  $(AB)^\#$  is activated complex. According to activated complex theory, the rate constant,  $k_2$ , is given by ( $k_B$  = Boltzmann constant;  $T$  = temperature)

Options :

1. ✘  $k_2 = \frac{k_B T}{h K^\ddagger}$

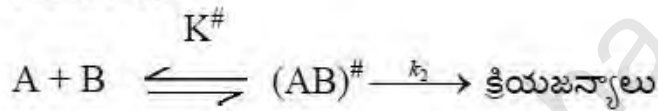
2. ✔  $k_2 = \left(\frac{k_B T}{h}\right) K^\ddagger$

3. ✘  $k_2 = \frac{k_B T}{h} + K^\ddagger$

4. ✘  $k_2 = \frac{k_B T}{h} - K^\ddagger$

Question Number : 51 Question Id : 79840723487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఒక ద్వీ అణుక చర్యను పరిశీలనలోకి తీసుకొనండి.



$K^\ddagger$  సమతా స్థితి స్థిరాంకము మరియు  $(AB)^\ddagger$  ఉత్తేజిత సంక్లిష్టం. ఉత్తేజిత సంక్లిష్ట సిద్ధాంతం ప్రకారము, చర్య స్థిరాంకం  $k_2$  ను ఇచ్చునది; ( $k_B =$  బోల్ట్జ్ మన్ స్థిరాంకము ;  $T =$  ఉష్ణోగ్రత)

Options :

1. ✘  $k_2 = \frac{k_B T}{h K^\ddagger}$

2. ✔  $k_2 = \left(\frac{k_B T}{h}\right) K^\ddagger$

3. ✘  $k_2 = \frac{k_B T}{h} + K^\ddagger$

4. ✘  $k_2 = \frac{k_B T}{h} - K^\ddagger$

Question Number : 52 Question Id : 79840723488 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

At 700 K, the rate constant of a first order reaction is given by

$$\log k = 15 - \left(\frac{1.25 \times 10^4 \text{ K}}{T}\right)$$

What is its approximate activation energy (in  $\text{kJ mol}^{-1}$ ) ( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ )

Options :

1. ✓ 240
2. ✗ 24
3. ✗ 2400
4. ✗ 24000

Question Number : 52 Question Id : 79840723488 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

700 K వద్ద,  $\log k = 15 - \left( \frac{1.25 \times 10^4 \text{ K}}{T} \right)$  ప్రదమ క్రమాంక చర్య యొక్క చర్యా స్థిరాంకాన్నిస్తుంది.

ఉజ్జాయింపుగా దాని ఉత్తేజిత శక్తి (  $\text{kJmol}^{-1}$  లో ) ఎంత ? ( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ )

- Options :
1. ✓ 240
  2. ✗ 24
  3. ✗ 2400
  4. ✗ 24000

Question Number : 53 Question Id : 79840723489 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

According to Arrhenius modified collision theory, the rate constant (k) (involving one type or two different types of reactants) is given by:

(Z = number of binary collisions per second in 1 ml; P = steric factor;  $E_a$  = activation energy; T = temperature of reaction)

- Options :
1. ✗  $k = PZ \exp\left(\frac{E_a}{RT}\right)$
  2. ✓  $k = PZ \exp\left(-\frac{E_a}{RT}\right)$
  3. ✗  $\log k = \log PZ + \left(\frac{E_a}{2.303R}\right)$
  4. ✗  $k = PZ \exp\left(-\frac{E_a}{R}\right)$

Question Number : 53 Question Id : 79840723489 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

అర్హీనియస్ రూపంతరీకీత అభిఘాత సిద్ధాంతం (modified collision theory) ప్రకారం, చర్య స్థిరాంకము (k) ను ఇచ్చునది (ఒకే రకం లేదా రెండు రకాల క్రియా జనకాలున్నప్పుడు):

(Z = 1 ml లో సెకనుకు యుగ్మాభిఘాతముల సంఖ్య) ; P = త్రిమితీయ గుణకము ; E<sub>a</sub> = ఉత్తేజిత శక్తి ; T = చర్య ఉష్ణోగ్రత)

Options :

1. ✘  $k = PZ \exp\left(\frac{E_a}{RT}\right)$

2. ✔  $k = PZ \exp\left(-\frac{E_a}{RT}\right)$

3. ✘  $\log k = \log PZ + \left(\frac{E_a}{2.303R}\right)$

4. ✘  $k = PZ \exp\left(-\frac{E_a}{R}\right)$

Question Number : 54 Question Id : 79840723490 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Correct : 2 Wrong : 0.66

Consider the reaction.



According to Lindemann theory, the rate (v) is

Options :

v is first order at low pressure and first order at high pressure or

1. ✘ v is first order at all Pressures

2. ✘ v is second order at all pressures

3. ✔ v is first order at high pressure and second order at low pressure

4. ✘ v is second order at high pressure and first order at low pressure

Question Number : 54 Question Id : 79840723490 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Correct : 2 Wrong : 0.66

ఈ క్రింది చర్యను గమనించగలరు,



లిండేమన్ సిద్ధాంతం ప్రకారం, వేగం (v)

Options :



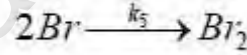
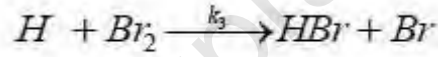
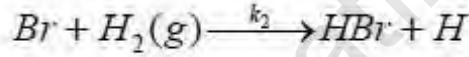
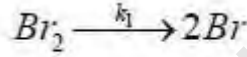
1. ✖ అల్పపీడనం వద్ద  $v$  ప్రధమ క్రమాంకము మరియు అధిక పీడనం వద్ద ప్రధమ క్రమాంకము లేదా అన్ని పీడనాల వద్ద  $v$  ప్రధమ క్రమాంకము
2. ✖ అన్ని పీడనాల వద్ద  $v$  ద్వితీయ క్రమాంకము
3. ✔  $V$  అధిక పీడనం వద్ద ప్రధమ క్రమాంకము మరియు అల్పపీడనం వద్ద ద్వితీయ క్రమాంకము
4. ✖  $V$  అధిక పీడనం వద్ద ద్వితీయ క్రమాంకము మరియు అల్పపీడనం వద్ద ప్రధమ క్రమాంకము

Question Number : 55 Question Id : 79840723491 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The reaction,  $H_2(g) + Br_2(g) \longrightarrow 2HBr(g)$ ,

involves the following steps



According to steady state approximation, which one of the following is correct?

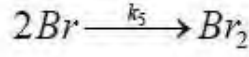
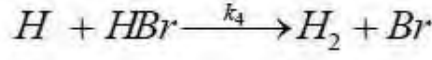
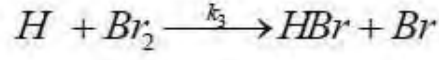
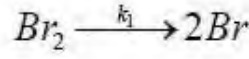
Options :

1. ✔  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] - k_4[H][HBr] = 0$
2. ✖  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] - k_4[H][HBr] \neq 0$
3. ✖  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_5[Br]^5 = 0$
4. ✖  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] = 0$

Question Number : 55 Question Id : 79840723491 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$H_2(g) + Br_2(g) \longrightarrow 2HBr(g)$ , ఈ చర్య క్రింది అంచలను కలిగి ఉన్నది



నిలకడ స్థితి ఉజ్జయింపు (steady state approximation) ప్రకారం, క్రింది వాటిలో సరియైనది ఏది?

Options :

1. ✓  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] - k_4[H][HBr] = 0$

2. ✗  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] - k_4[H][HBr] \neq 0$

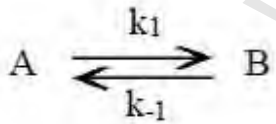
3. ✗  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_5[Br]^2 = 0$

4. ✗  $\frac{d[H]}{dt} = k_2[H_2][Br] - k_3[H][Br_2] = 0$

Question Number : 56 Question Id : 79840723492 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Consider the following opposing reaction



Both forward and opposing reactions are first order. The rate of formation of B is given by

((a-x) is the concentration of A at time t)

Options :

1. ✓  $\frac{dx}{dt} = k_1(a-x) - k_{-1}x$

2. ✖  $\frac{dx}{dt} = k_1(a-x) + k_{-1}x$

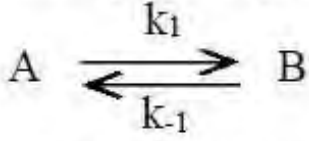
3. ✖  $\frac{dx}{dt} = k_1x + k_{-1}(a-x)$

4. ✖  $\frac{dx}{dt} = k_1x - k_{-1}(a-x)$

Question Number : 56 Question Id : 79840723492 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వ్యతిరేక చర్య ని గమనించండి



పురోగామి మరియు వ్యతిరేక చర్యలు రెండు ప్రథమ క్రమాంక చర్యలే. B ఏర్పడు చర్యా వేగం :  
t సమయం వద్ద A గాఢత (a-x)

Options :

1. ✔  $\frac{dx}{dt} = k_1(a-x) - k_{-1}x$

2. ✖  $\frac{dx}{dt} = k_1(a-x) + k_{-1}x$

3. ✖  $\frac{dx}{dt} = k_1x + k_{-1}(a-x)$

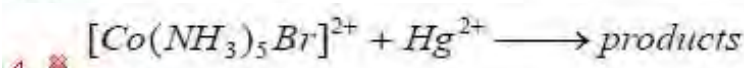
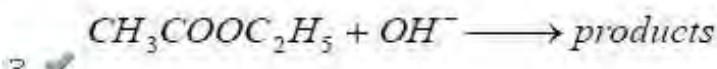
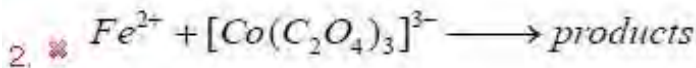
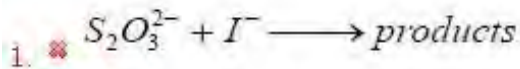
4. ✖  $\frac{dx}{dt} = k_1x - k_{-1}(a-x)$

Question Number : 57 Question Id : 79840723493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify the reaction, for which the rate of the reaction is independent of ionic strength

Options :



Question Number : 57 Question Id : 79840723493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

అయానిక సమర్థ్యం మీద ఆధారపడని చర్య వేగం గల చర్యని గుర్తించండి

Options :

1. ✘  $S_2O_3^{2-} + I^- \longrightarrow products$
2. ✘  $Fe^{2+} + [Co(C_2O_4)_3]^{3-} \longrightarrow products$
3. ✔  $CH_3COOC_2H_5 + OH^- \longrightarrow products$
4. ✘  $[Co(NH_3)_5Br]^{2+} + Hg^{2+} \longrightarrow products$

Question Number : 58 Question Id : 79840723494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Consider a reaction in solution



$Z_A$  and  $Z_B$  are the charges of reactants A and B, respectively. A plot of  $\ln\left(\frac{k}{k_0}\right)$  versus square root of ionic strength gave a straight line with slope equals to 1.02.  $Z_A$  and  $Z_B$  are respectively

Options :

1. ✘ +1, -1
2. ✘ -1, +1
3. ✔ -1, -1
4. ✘ +1, 0

Question Number : 58 Question Id : 79840723494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ద్రావణం లోని ఒక చర్యని గమనించండి



$Z_A$  మరియు  $Z_B$  లు వరుసగా A మరియు B అను క్రియాజనకాల ఆవేశాలు.  $\ln\left(\frac{k}{k_0}\right)$  అయానిక సమర్థ్యం

వర్గామూలమునకు గీసిన గ్రాఫ్ 1.02 వాలు గల సరళ రేఖ నిస్తుంది.  $Z_A$  మరియు  $Z_B$  లు వరుసగా

Options :

1. ✘ +1, -1
2. ✘ -1, +1
3. ✔ -1, -1

4. ✘ +1, 0

Question Number : 59 Question Id : 79840723495 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify correct statements from the following

- (a) Hammett equation is applicable for meta and para substituted benzoic acids
- (b) Hammett equation is not applicable to ortho substituted benzoic acids
- (c) Hammett equation is a linear free energy relation

Options :

- 1. ✘ a, b
- 2. ✘ b, c
- 3. ✔ a, b, c
- 4. ✘ a, c

Question Number : 59 Question Id : 79840723495 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది వాటిలో సరియైన వివరణలను గుర్తించండి

- (a) హామ్మెట్ సమీకరణము మెటా మరియు పారా ప్రతిక్షేపిత బెంజోయిక్ ఆమ్లాలకు వర్తిస్తుంది
- (b) హామ్మెట్ సమీకరణము ఆర్థో ప్రతిక్షేపిత బెంజోయిక్ ఆమ్లాలకు వర్తించదు
- (c) హామ్మెట్ సమీకరణం ఒక రేఖీయ స్వచ్ఛా శక్తి సంబంధం

Options :

- 1. ✘ a, b
- 2. ✘ b, c
- 3. ✔ a, b, c
- 4. ✘ a, c

Question Number : 60 Question Id : 79840723496 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

An enzyme catalyzed reaction follows Michaelis-Menton mechanism. If  $V_{\max}$  is the maximum

rate of the reaction, then at rate =  $\frac{V_{\max}}{2}$ , the [S] is

Options :

- 1. ✔ [S] =  $K_m$

2. ✘  $[S] = \frac{1}{K_m}$

3. ✘  $[S]^2 = K_m$

4. ✘  $[S] = \sqrt{K_m}$

Question Number : 60 Question Id : 79840723496 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక ఎంజైం ఉత్తేజిత చర్య మైకలీస్ - మేంట్స్ క్రియా విధానాన్ని అనుసరిస్తుంది.  $V_{max}$  అత్యధిక చర్య వేగం

ఐనప్పుడు, వేగం =  $\frac{V_{max}}{2}$ . వద్ద,  $[S]$ :

Options :

1. ✔  $[S] = K_m$

2. ✘  $[S] = \frac{1}{K_m}$

3. ✘  $[S]^2 = K_m$

4. ✘  $[S] = \sqrt{K_m}$

Question Number : 61 Question Id : 79840723497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which pair is not correctly matched?

Options :

1. ✘ Molecule/ion NO Bond order 2.5

2. ✘ Molecule/ion HF Bond order 1

3. ✘ Molecule/ion  $[NO]^+$  Bond order 3

4. ✔ Molecule/ion CO Bond order 2.5

Question Number : 61 Question Id : 79840723497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రిందివానిలో<sup>6</sup> సరిగా జత పరచని జంట ఏది ?

Options :

	Molecule/ion	Bond order
1. ✘	NO	2.5
2. ✘	HF	1
3. ✘	[NO] <sup>+</sup>	3
4. ✔	CO	2.5

Question Number : 62 Question Id : 79840723498 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

According to VSEPR theory, which one of the following is not correct?

Options :

1. ✘ Electron pair tend to minimize repulsions
2. ✔ Repulsions are of the order BP – BP > LP – BP > LP – LP
3. ✘ The ideal geometry for five electron pairs is TBP
4. ✘ Double bonds occupy more space than single bonds

Question Number : 62 Question Id : 79840723498 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

VSEPR సిద్ధాంతం ప్రకారం క్రింది వాటిలో ఏది సరైనది కాదు ?

Options :

1. ✘ ఎలక్ట్రాన్ జంట వికర్షణలను తగ్గించడానికి చూస్తుంది
2. ✔ వికర్షణల క్రమము BP – BP > LP – BP > LP – LP
3. ✘ TBP ఐదు ఎలక్ట్రాన్ జంటలకు ఆదర్శ జ్యామితి
4. ✘ ఏక బంధాలకంటే ద్విబంధాలు ఎక్కువ ప్రదేశాన్ని ఆక్రమిస్తాయి

Question Number : 63 Question Id : 79840723499 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

The correct energy order of molecular orbitals of N<sub>2</sub> is:

Options :

1. ✔  $(\pi_{2py}) < (\sigma_{2pz}) < (\pi^*_{2px}) \approx (\pi^*_{2py})$

2. ✘  $(\pi_{2py}) > (\sigma_{2pz}) > (\pi^*_{2px}) \approx (\pi^*_{2py})$

3. ✘  $(\pi_{2py}) < (\sigma_{2pz}) > (\pi^*_{2px}) \approx (\pi^*_{2py})$

4. ✘  $(\pi_{2py}) > (\sigma_{2pz}) < (\pi^*_{2px}) \approx (\pi^*_{2py})$

Question Number : 63 Question Id : 79840723499 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$N_2$  అణు ఆర్బిటాల్ ల సరియైన శక్తి క్రమము :

Options :

1. ✔  $(\pi_{2py}) < (\sigma_{2pz}) < (\pi^*_{2px}) \approx (\pi^*_{2py})$

2. ✘  $(\pi_{2py}) > (\sigma_{2pz}) > (\pi^*_{2px}) \approx (\pi^*_{2py})$

3. ✘  $(\pi_{2py}) < (\sigma_{2pz}) > (\pi^*_{2px}) \approx (\pi^*_{2py})$

4. ✘  $(\pi_{2py}) > (\sigma_{2pz}) < (\pi^*_{2px}) \approx (\pi^*_{2py})$

Question Number : 64 Question Id : 79840723500 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The hybridization of nitrogen in  $NO_2^+$ ,  $NO_3^-$  and  $NH_4^+$ , respectively is

Options :

1. ✘  $sp, sp^3$  and  $sp^2$

2. ✔  $sp, sp^2$  and  $sp^3$

3. ✘  $sp^2, sp$  and  $sp^3$

4. ✘  $sp^2, sp^3$  and  $sp$

Question Number : 64 Question Id : 79840723500 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$NO_2^+$ ,  $NO_3^-$  మరియు  $NH_4^+$  లలో నైట్రోజన్ సంకరీకరణం వరుసగా

Options :

1. ✘  $sp, sp^3$  and  $sp^2$

2. ✔  $sp, sp^2$  and  $sp^3$

3. ✘  $sp^2, sp$  and  $sp^3$

4. ✘  $sp^2, sp^3$  and  $sp$



Question Number : 65 Question Id : 79840723501 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

If the transition elements exist in more than one oxidation states, their relative stabilities can be known from

Options :

1. ✘ electronegativity values
2. ✔ Standard electrode potential
3. ✘ heat of formation
4. ✘ Ionic radii

Question Number : 65 Question Id : 79840723501 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒకటి కంటే ఎక్కువ ఆక్సీకరణ స్థితులలో పరివర్తన మూలకాలు ఉంటే, వాటి సాపేక్ష స్థిరత్వాన్ని తెలిపేది

Options :

1. ✘ ఋణాత్మక విద్యుదావేశ విలువలు (electronegativity values)
2. ✔ ప్రామాణిక ఋణద్రవ సామర్థ్యం (Standard electrode potential)
3. ✘ ఏర్పడు ఉష్ణోగ్రత (heat of formation)
4. ✘ అయానుల వ్యాసార్థాలు (Ionic radii)

Question Number : 66 Question Id : 79840723502 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Transition metals can form complex ions because they

Options :

1. ✘ have paired electrons in d-sub shell
2. ✘ have small charge/size ratio
3. ✘ have unpaired electrons in d-sub shell
4. ✔ provide vacant d-orbitals

Question Number : 66 Question Id : 79840723502 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

పరివర్తన మూలకాలు సంక్లిష్ట అయాన్ ల నేర్పరుస్తాయి ఎందుకంటే అవి :

Options :

1. ✘ d-ఉపకర్పరం లో జత గూడిన ఎలక్ట్రానులను కల్గి యుంటాయి

2. ✖ తక్కువ ఆవేశం / పరిమాణం నిష్పత్తిని కలిగి ఉంటాయి

3. ✖ d-ఉపకర్పరం లో జతగూడని ఎలక్ట్రాన్ లను కలిగి ఉంటాయి

4. ✔ ఖాళి d-ఆర్బిటల్ ను కలిగి ఉంటాయి

Question Number : 67 Question Id : 79840723503 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Atomic radii of II and III transition series are almost same because of

Options :

1. ✖ diagonal relationship

2. ✔ Lanthanide contraction

3. ✖ shielding effect

4. ✖ Actinide contraction

Question Number : 67 Question Id : 79840723503 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

II మరియు III పరివర్తన శ్రేణుల పరమాణు వ్యాసార్థాలు దాదాపు సమంగా ఉంటాయి, కారణం

Options :

1. ✖ కర్ణ సంబంధం

2. ✔ లాంథనైడ్ సంకోచం

3. ✖ యవనిక ప్రభావం

4. ✖ ఆక్టినైడ్ సంకోచం

Question Number : 68 Question Id : 79840723504 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct order of d-orbital splitting in a square planar geometry is

Options :

1. ✖  $d_{xz} \approx d_{yz} < d_{x^2-y^2} < d_{xy} < d_z^2$

2. ✖  $d_{xz} \approx d_{yz} < d_{xy} < d_z^2 < d_{x^2-y^2}$

3. ✔  $d_{xz} \approx d_{yz} < d_z^2 < d_{xy} < d_{x^2-y^2}$

4. ✖  $d_z^2 < d_{xy} < d_{xz} \approx d_{yz} < d_{x^2-y^2}$

Question Number : 68 Question Id : 79840723504 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

చతుర సమతల జ్యామితిలో d-ఆర్బిటాల్ విభజన యొక్క సరియైన క్రమం

Options :

- $d_{xz} \approx d_{yz} < d_x^2 - y^2 < d_{xy} < d_z^2$
- $d_{xz} \approx d_{yz} < d_{xy} < d_z^2 < d_x^2 - y^2$
- $d_{xz} \approx d_{yz} < d_z^2 < d_{xy} < d_x^2 - y^2$
- $d_z^2 < d_{xy} < d_{xz} \approx d_{yz} < d_x^2 - y^2$

Question Number : 69 Question Id : 79840723505 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

For which pair of complexes, the order of values of  $\Delta_o$  is correct?

Options :

- $[Rh(NH_3)_6]^{3+} > [Co(NH_3)_6]^{3+}$
- $[Fe(CN)_6]^{4-} > [Fe(CN)_6]^{3-}$
- $[Cr(OH_2)_6]^{2+} > [Cr(OH_2)_6]^{3+}$
- $[CrF_6]^{3-} > [Cr(CN)_6]^{3-}$

Question Number : 69 Question Id : 79840723505 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఏ సంక్లిష్టాల జంటకు,  $\Delta_o$  విలువల క్రమం సరియైనది

Options :

- $[Rh(NH_3)_6]^{3+} > [Co(NH_3)_6]^{3+}$
- $[Fe(CN)_6]^{4-} > [Fe(CN)_6]^{3-}$
- $[Cr(OH_2)_6]^{2+} > [Cr(OH_2)_6]^{3+}$
- $[CrF_6]^{3-} > [Cr(CN)_6]^{3-}$

Question Number : 70 Question Id : 79840723506 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The crystal field stabilization energy of  $K_2[PtCl_6]$  is

Options :

- $-0.6 \Delta_o$

2. ✘  $+ 1.2 \Delta_o$

3. ✘  $- 1.8 \Delta_o$

4. ✔  $- 0.4 \Delta_o$

Question Number : 70 Question Id : 79840723506 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$K_2[PtCl_6]$  యొక్క స్పటిక క్షేత్ర స్థిరీకరణ శక్తి

Options :

1. ✘  $- 0.6 \Delta_o$

2. ✘  $+ 1.2 \Delta_o$

3. ✘  $- 1.8 \Delta_o$

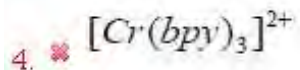
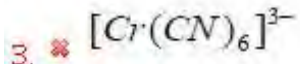
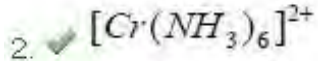
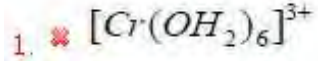
4. ✔  $- 0.4 \Delta_o$

Question Number : 71 Question Id : 79840723507 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which metal complex among the following is expected to undergo Jahn-Teller distortion?

Options :

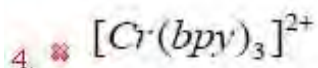
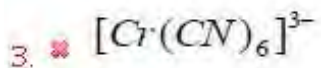
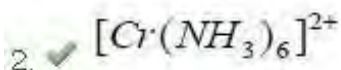
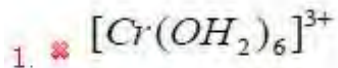


Question Number : 71 Question Id : 79840723507 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది వాటిలో ఏ లోహ సంక్లిష్టం జాన్ టెల్లర్ విరూపణము చెందవచ్చును

Options :



Question Number : 72 Question Id : 79840723508 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Full spectroscopic term symbol for an atom with resultant orbital quantum number value of  $L = 2$  and the resultant spin quantum number value of  $S = 1$  is

Options :

1. ✘  $^3S_1$
2. ✘  $^3P_2$
3. ✔  $^3D_3$
4. ✘  $^3P_1$

Question Number : 72 Question Id : 79840723508 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఫలిత ఆర్బిటాల్ క్వాంటం సంఖ్య విలువ  $L = 2$ , మరియు ఫలిత స్పిన్ క్వాంటం సంఖ్య విలువ,  $S = 1$  గల పరమాణువు యొక్క సంపూర్ణ వర్ణ పటీయ పదం(Full spectroscopic term) సంకేతం

Options :

1. ✘  $^3S_1$
2. ✘  $^3P_2$
3. ✔  $^3D_3$
4. ✘  $^3P_1$

Question Number : 73 Question Id : 79840723509 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The number of Zeeman states for  $^3D_2$  is

Options :

1. ✘ 7
2. ✔ 5
3. ✘ 6
4. ✘ 4

Question Number : 73 Question Id : 79840723509 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$^3D_2$  ల యొక్క జీమన్ స్థితుల సంఖ్య

Options :

1. ✘ 7
2. ✔ 5
3. ✘ 6

4. ✘ 4

Question Number : 74 Question Id : 79840723510 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Term symbol for an empty or filled subshell is

Options :

1. ✔  $^1S_0$

2. ✘  $^1D_2$

3. ✘  $^3P_0$

4. ✘  $^1P_0$

Question Number : 74 Question Id : 79840723510 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఖాళీ లేదా నిండిన ఉపకర్పరం యొక్క పదం (Term) సంకేతం

Options :

1. ✔  $^1S_0$

2. ✘  $^1D_2$

3. ✘  $^3P_0$

4. ✘  $^1P_0$

Question Number : 75 Question Id : 79840723511 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

According to Irving – William series of stability, for a given ligand, the order of stability of complexes formed from  $Ba^{2+}$ ,  $Sr^{2+}$ ,  $Fe^{2+}$  and  $Cu^{2+}$  is

Options :

1. ✘  $Ba^{2+} < Fe^{2+} < Cu^{2+} < Sr^{2+}$

2. ✘  $Sr^{2+} < Ba^{2+} < Fe^{2+} < Cu^{2+}$

3. ✔  $Ba^{2+} < Sr^{2+} < Fe^{2+} < Cu^{2+}$

4. ✘  $Ba^{2+} < Fe^{2+} < Sr^{2+} < Cu^{2+}$

Question Number : 75 Question Id : 79840723511 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఇర్వింగ్ - విలియం స్థిరత్వ శ్రేణుల ప్రకారం, ఇవ్వబడిన లైగాండ్ కు  $Ba^{2+}$ ,  $Sr^{2+}$ ,  $Fe^{2+}$  మరియు  $Cu^{2+}$  ల నుండి

విర్పడు సంశ్లిష్టాల స్థిరత్వ క్రమం :

Options :

1. ✘  $Ba^{2+} < Fe^{2+} < Cu^{2+} < Sr^{2+}$
2. ✘  $Sr^{2+} < Ba^{2+} < Fe^{2+} < Cu^{2+}$
3. ✔  $Ba^{2+} < Sr^{2+} < Fe^{2+} < Cu^{2+}$
4. ✘  $Ba^{2+} < Fe^{2+} < Sr^{2+} < Cu^{2+}$

Question Number : 76 Question Id : 79840723512 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$Mg^{2+}$ ,  $Ca^{2+}$  and  $Sr^{2+}$  ions form stable complexes with crown ethers. This involves interactions between

Options :

1. ✘ Soft acid and hard base
2. ✔ Hard acid and hard base
3. ✘ Soft acid and soft base
4. ✘ Hard acid and soft base

Question Number : 76 Question Id : 79840723512 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రొన్ ఈథర్ లతో  $Mg^{2+}$ ,  $Ca^{2+}$  మరియు  $Sr^{2+}$  లు స్థిర సంశ్లిష్టాలను ఏర్పరుస్తాయి. ఇందులో వేటి మధ్య అన్వేష్య చర్యలు జరుగుతాయి

Options :

1. ✘ Soft acid and hard base (మృదు ఆమ్లము మరియు కఠిన క్షారము )
2. ✔ Hard acid and hard base( కఠిన ఆమ్లము మరియు కఠిన క్షారము )
3. ✘ Soft acid and soft base(మృదు ఆమ్లము మరియు మృదు క్షారము )
4. ✘ Hard acid and soft base( కఠిన ఆమ్లము మరియు మృదు క్షారము )

Question Number : 77 Question Id : 79840723513 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the base-catalyzed substitution of  $Cl^-$  by  $[OH]^-$  in  $[Co(NH_3)_5Cl]^{2+}$  under strongly basic conditions, the first step in the mechanism is

Options :

1. ✔ conversion of an ammine to amido ligand
2. ✘ Substitution of  $Cl^-$  by  $[OH]^-$

3. ✖ Dissociation of  $Cl^-$  to give a 5-coordinate intermediate

4. ✖ Association of  $[OH]^-$  to give a 7-coordinate intermediate

Question Number : 77 Question Id : 79840723513 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

అత్యధిక క్షార పరిస్థితులలో  $[Co(NH_3)_5Cl]^{2+}$  లోని  $Cl^-$  ను  $[OH]^-$  తో జరిపే క్షార ఉత్తేజిత ప్రతిక్షేపణ చర్య విధానం లో మొదటి అంచె :

Options :

1. ✓ అమీన్ ను అమైడ్ లైగాండ్ గా మార్చటం

2. ✖  $Cl^-$  ను  $[OH]^-$  తో ప్రతిక్షేపించటం

3. ✖  $Cl^-$  ను వియోజనం చెంది 5- కోఆర్డినేట్ మధ్యస్థాన్ని వ్వటం

4. ✖  $[OH]^-$  సాహచర్యం చెంది 7- కోఆర్డినేట్ మధ్యస్థాన్ని వ్వటం

Question Number : 78 Question Id : 79840723514 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the reaction  $trans - [Co(AA)_2Cl_2]^+ + H_2O \rightarrow trans - [Co(AA)_2Cl(H_2O)]^+ + Cl^-$ .

Match the following ligands (AA) with their rates of hydrolysis

Non-replaceable ligand (AA)	Rate ( $min^{-1}$ )
(A) $H_2NCH_2CH_2NH_2$	(i) $8.8 \times 10^{-3}$
(B) $H_2NCH(CH_3)CH_2NH_2$	(ii) $1.9 \times 10^{-3}$
(C) $H_2NCH(CH_3)CH(CH_3)NH_2$	(iii) $3.7 \times 10^{-3}$

Options :

1. ✖ A – (i); B – (iii); C – (ii)

2. ✖ A – (iii); B – (ii); C – (i)

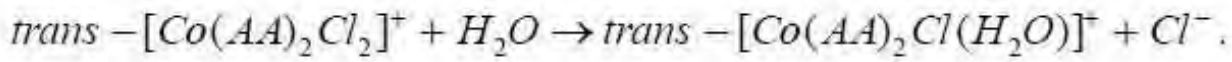
3. ✖ A – (ii); B – (i); C – (iii)

4. ✓ A – (ii); B – (iii); C – (i)

Question Number : 78 Question Id : 79840723514 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66





చర్య కు , క్రింది ఇవ్వబడిన లైగాండ్ (AA) లను వాటి జల విశ్లేషణ వేగాలలో జత పరచండి

పునః స్థాపనీయం కాని లైగాండ్ (AA)	వేగం ( $\text{min}^{-1}$ )
(A) $\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2$	(i) $8.8 \times 10^{-3}$
(B) $\text{H}_2\text{NCH}(\text{CH}_3)\text{CH}_2\text{NH}_2$	(ii) $1.9 \times 10^{-3}$
(C) $\text{H}_2\text{NCH}(\text{CH}_3)\text{CH}(\text{CH}_3)\text{NH}_2$	(iii) $3.7 \times 10^{-3}$

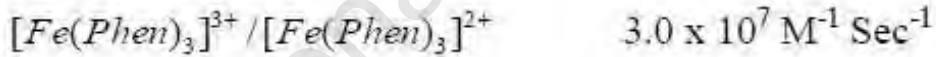
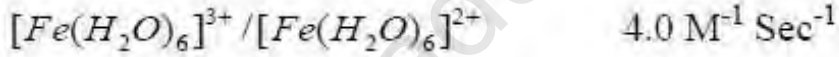
Options :

1. ✘ A – (i); B – (iii); C – (ii)
2. ✘ A – (iii); B – (ii); C – (i)
3. ✘ A – (ii); B – (i); C – (iii)
4. ✔ A – (ii); B – (iii); C – (i)

Question Number : 79 Question Id : 79840723515 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Consider the second order rate constants for the following outer-sphere electron transfer reactions



The reason for the enhanced rate constant for the second reaction is

(Phen = 1,10 – Phenanthroline)

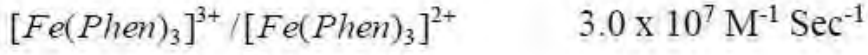
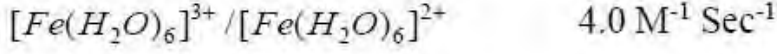
Options :

1. ✔ 1,10 – Phenanthroline is a  $\pi$ -acceptor ligand that allows mixing of electron donor and acceptor orbitals that enhance the rate of electron transfer
2. ✘ 1,10 – Phenanthroline is a  $\pi$ -donor ligand that enhances the rate of electron transfer
3. ✘ 1,10 – Phenanthroline forms charge transfer complex with iron and facilitates the electron transfer
4. ✘ 1,10 – Phenanthroline forms kinetically labile complex with Fe and facilitates the electron transfer

Question Number : 79 Question Id : 79840723515 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది ఇవ్వబడిన బాహ్య గోళ ఎలక్ట్రాన్ బదలాయింపు చర్యల ద్వితీయ క్రమాంక వేగం స్థిరాంకాలను గమనించండి



రెండోవ చర్యకు పెరిగిన వేగ స్థిరాంకమునకు కారణం

(Phen = 1,10 - ఫినాన్ట్రోలిన్)

Options :

1. ✓  
1,10 - ఫినాన్ట్రోలిన్, π- గ్రాహి లైగాండ్, అది, ఎలక్ట్రాన్ బదిలీ వేగాన్ని పెంచే ఎలక్ట్రాన్ దాత మరియు గ్రాహి ఆర్బిటాల్ ల కలయిక ను ఆమోదిస్తుంది
2. ✗  
1,10 - ఫినాన్ట్రోలిన్, π- దాత లైగాండ్, అది ఎలక్ట్రాన్ బదిలీ వేగాన్ని పెంచుతుంది
3. ✗  
1,10 - ఫినాన్ట్రోలిన్ ఆవేశ బదిలీ (charge transfer) సంశ్లిష్టాన్ని ఐరన్ తో ఏర్పరిచి, ఎలక్ట్రాన్ బదిలీ కి అవకాశాన్నిస్తుంది
4. ✗  
1,10 - ఫినాన్ట్రోలిన్ ఐరన్ తో గతిజంగా అస్థిరమైన (kinetically labile) సంశ్లిష్టాన్ని ఏర్పరిచి ఎలక్ట్రాన్ బదిలీకి అవకాశాన్నిస్తుంది

Question Number : 80 Question Id : 79840723516 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Among the following ligands  $CN^-$ ,  $NH_3$ , pyridine and  $N_3^-$ , which of them are suitable for bridging ligands to initiate inner sphere electron transfer reactions

Options :

1. ✗  $NH_3$  and pyridine
2. ✓  $CN^-$  and  $N_3^-$
3. ✗  $CN^-$  only
4. ✗ Pyridine only

Question Number : 80 Question Id : 79840723516 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$CN^-$ ,  $NH_3$ , పిరడిన్ మరియు  $N_3^-$ , లలో, అంతర గోళ ఎలక్ట్రాన్ బదలాయింపు చర్యలను ప్రారంభించుటకు వారధి లైగాండ్ లుగా అనుకూలమైనవి

Options :

1. ✘  $\text{NH}_3$  మరియు పీరడిన్
2. ✔  $\text{CN}^-$  మరియు  $\text{N}_3^-$
3. ✘  $\text{CN}^-$  మాత్రమే
4. ✘ పీరడిన్ మాత్రమే

Question Number : 81 Question Id : 79840723517 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify the correct sequence of trans-effect in the substitution reactions involving Pt(II) and the ligands  $\text{CN}^-$ ,  $\text{Cl}^-$ ,  $\text{OH}^-$  and  $\text{NO}_2^-$

Options :

1. ✘  $\text{OH}^- > \text{Cl}^- > \text{NO}_2^- > \text{CN}^-$
2. ✘  $\text{NO}_2^- > \text{Cl}^- > \text{OH}^- > \text{CN}^-$
3. ✔  $\text{CN}^- > \text{NO}_2^- > \text{Cl}^- > \text{OH}^-$
4. ✘  $\text{Cl}^- > \text{OH}^- > \text{NO}_2^- > \text{CN}^-$

Question Number : 81 Question Id : 79840723517 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Pt(II) మరియు  $\text{CN}^-$ ,  $\text{Cl}^-$ ,  $\text{OH}^-$ ,  $\text{NO}_2^-$  అను లైగాండ్ లు పాల్గొను ప్రతిక్షేపనం చర్యలలో ట్రాన్స్-ప్రభావపు సరియైన క్రమాన్ని గుర్తించండి.

Options :

1. ✘  $\text{OH}^- > \text{Cl}^- > \text{NO}_2^- > \text{CN}^-$
2. ✘  $\text{NO}_2^- > \text{Cl}^- > \text{OH}^- > \text{CN}^-$
3. ✔  $\text{CN}^- > \text{NO}_2^- > \text{Cl}^- > \text{OH}^-$
4. ✘  $\text{Cl}^- > \text{OH}^- > \text{NO}_2^- > \text{CN}^-$

Question Number : 82 Question Id : 79840723518 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which statement is not correct about typical metal carbonyl complexes  $\text{M}(\text{CO})_n$ ?

Options :

1. ✘ They are likely to obey the 18-electron rule
2. ✘ They contain  $\pi$ -acceptor ligands
3. ✘ M is in a zero-oxidation state
4. ✔ They are likely to be paramagnetic

Question Number : 82 Question Id : 79840723518 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

విలక్షణ లోహ కార్బోనిల్ సంశ్లిష్టాల,  $M(CO)_n$  గురించి సరియైన వివరణ కానిది ఏది ?

Options :

1. ✖ అవి 18- ఎలక్ట్రాన్ నియమానికి కట్టుబడే అవకాశం ఉంది
2. ✖ అవి  $\pi$ -గ్రాహి లైగాండ్ లను కలిగి ఉంటాయి
3. ✖ M, సున్న ఆక్సీకరణ స్థితిలో ఉంటుంది
4. ✔ అవి పరాయస్కాంతంగా ఉండే అవకాశం ఉంది

Question Number : 83 Question Id : 79840723519 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Match the following metal carbonyls with the absorption frequency (in  $cm^{-1}$ ) for CO

Options :

1. ✖  $[V(CO)_6]^- = 2090 cm^{-1}$ ;  $[Cr(CO)_6] = 1980 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 1860 cm^{-1}$
2. ✔  $[V(CO)_6]^- = 1860 cm^{-1}$ ;  $[Cr(CO)_6] = 1980 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 2090 cm^{-1}$
3. ✖  $[V(CO)_6]^- = 1980 cm^{-1}$ ;  $[Cr(CO)_6] = 2090 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 1860 cm^{-1}$
4. ✖  $[V(CO)_6]^- = 1980 cm^{-1}$ ;  $[Cr(CO)_6] = 1860 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 2090 cm^{-1}$

Question Number : 83 Question Id : 79840723519 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది లోహ కార్బోనిల్ లను CO శోషణ పానః పుణ్యం ( $cm^{-1}$  లలో) తో జతపరచండి

Options :

1. ✖  $[V(CO)_6]^- = 2090 cm^{-1}$ ;  $[Cr(CO)_6] = 1980 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 1860 cm^{-1}$
2. ✔  $[V(CO)_6]^- = 1860 cm^{-1}$ ;  $[Cr(CO)_6] = 1980 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 2090 cm^{-1}$
3. ✖  $[V(CO)_6]^- = 1980 cm^{-1}$ ;  $[Cr(CO)_6] = 2090 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 1860 cm^{-1}$
4. ✖  $[V(CO)_6]^- = 1980 cm^{-1}$ ;  $[Cr(CO)_6] = 1860 cm^{-1}$ ;  $[Mn(CO)_6]^+ = 2090 cm^{-1}$

Question Number : 84 Question Id : 79840723520 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The following statements describes the terminal and bridging carbonyl groups

- A) The CO bond in terminal carbonyl group is stronger than CO bond in bridging carbonyl group.
- B) Infrared absorption for a terminal CO would occur at lower frequency than for bridging CO.
- C) If the CO group in a neutral binary carbonyl absorbs between  $2050 - 1900 \text{ cm}^{-1}$ , the CO group is terminally bonded and if absorption occurs at  $1900 - 1800 \text{ cm}^{-1}$ , the CO group is bridging carbonyl group.
- D) If the CO group in a neutral binary carbonyl absorbs between  $2050 - 1900 \text{ cm}^{-1}$ , the CO group is bridging carbonyl group and if absorption occurs at  $1900 - 1800 \text{ cm}^{-1}$ , the CO group is terminally bonded.

Which of the above statements are true?

Options :

1. ✓ A & C
2. ✗ A & B
3. ✗ B & C
4. ✗ A & D

Question Number : 84 Question Id : 79840723520 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వివరణలు అంత్య మరియు వారధి కార్బోనిల్ లను వర్ణిస్తాయి

- A) అంత్య కార్బోనిల్ సమూహముల లోని CO బంధం వారధి కార్బోనిల్ సమూహములోని బంధం కంటే బలమైనది
- B) అంత్య CO పరారుణ శోషణం, వారధి CO కంటే తక్కువ పోనః పుణ్యం వద్ద జరుగుతుంది .
- C) తటస్థ యుగ్మ కార్బోనిల్ లోని CO సమూహం  $2050 - 1900 \text{ cm}^{-1}$ . వద్ద శోషణం చెందితే, ఆ CO సమూహం అంత్యముగా బంధితమైనది మరియు శోషణం  $1900 - 1800 \text{ cm}^{-1}$ . వద్దజరిగితే, ఆ CO సమూహం వారధి కార్బోనిల్ సమూహం
- D) తటస్థ యుగ్మ కార్బోనిల్ లోని CO సమూహం  $2050 - 1900 \text{ cm}^{-1}$ . వద్ద శోషణం చెందితే, ఆ CO సమూహం వారధి కార్బోనిల్ సమూహం అవుతుంది మరియు శోషణం  $1900 - 1800 \text{ cm}^{-1}$ . వద్దజరిగితే, ఆ CO సమూహం అంత్యముగా బంధితమైన సమూహం

పై వివరణలలో ఏవి సరైనవి ?

Options :

1. ✓ A & C
2. ✗ A & B
3. ✗ B & C
4. ✗ A & D

Question Number : 85 Question Id : 79840723521 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the complex  $[Fe(NO)_2(CO)_2]$  which obeys EAN rule, NO ligand is assumed to be

Options :

1. ✘ 1 – electron donor
2. ✔ 3 – electron donor
3. ✘ 2 – electron donor
4. ✘ 4 – electron donor

Question Number : 85 Question Id : 79840723521 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

EAN నియమాన్ని పాటించు  $[Fe(NO)_2(CO)_2]$  సంక్లిష్టంలో NO లైగాండ్ ఏమని ఊహించవచ్చును

Options :

1. ✘ 1 – electron donor (ఎలక్ట్రాన్ దాత )
2. ✔ 3 – electron donor (ఎలక్ట్రాన్ దాత )
3. ✘ 2 – electron donor (ఎలక్ట్రాన్ దాత )
4. ✘ 4 – electron donor (ఎలక్ట్రాన్ దాత )

Question Number : 86 Question Id : 79840723522 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The type of bond involved in bonding in  $B_2H_6$  is

Options :

1. ✘ 3C – 2 e<sup>-</sup> triply bridged BBB bond
2. ✘ 2C – 2 e<sup>-</sup> normal B – B bond
3. ✔ 3C – 2 e<sup>-</sup> bent BHB bond
4. ✘ 2C – 3 e<sup>-</sup> normal B – B bond

Question Number : 86 Question Id : 79840723522 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$B_2H_6$  బంధం లో ఉన్న బంధం రకం

Options :

1. ✘ 3C – 2 e<sup>-</sup> త్రిక వారధి BBB బంధం
2. ✘ 2C – 2 e<sup>-</sup> సాధారణ B – B బంధం
3. ✔ 3C – 2 e<sup>-</sup> కోణీయ BHB బంధం

4. ✖  $2C - 3e^-$  సాధారణ B - B బంధం

Question Number : 87 Question Id : 79840723523 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The number of electron pairs present in multicenter bonding orbitals of Nidocarborene skeletal structure. (Where m is total number of B and C atoms)

Options :

1. ✔  $(m + 2)$  electron pairs
2. ✖  $(m + 1)$  electron pairs
3. ✖  $(m + 4)$  electron pairs
4. ✖  $(m + 3)$  electron pairs

Question Number : 87 Question Id : 79840723523 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

నీడో కార్బోరెన్ సంకీర్ణ (skeletal) నిర్మాణం యొక్క బహు కేంద్రిత అణు ఆర్బిటాళ్ళ లో ఉన్న ఎలక్ట్రాన్ జంటల సంఖ్య ( m అనేది B మరియు C పరమాణువుల మొత్తము):

Options :

1. ✔  $(m + 2)$  ఎలక్ట్రాన్ జంటలు
2. ✖  $(m + 1)$  ఎలక్ట్రాన్ జంటలు
3. ✖  $(m + 4)$  ఎలక్ట్రాన్ జంటలు
4. ✖  $(m + 3)$  ఎలక్ట్రాన్ జంటలు

Question Number : 88 Question Id : 79840723524 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following compounds resemble benzene and hence known as Inorganic benzene

Options :

1. ✖ Dibornae
2. ✖ Nido decaborane
3. ✔ Borazole
4. ✖ Arachno pentaborane

Question Number : 88 Question Id : 79840723524 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది వానిలో ఏది బెంజిన్ ను పోలివుండి 'ఇనార్గానిక్ బెంజిన్' గా గుర్తింపు బడినది

Options :

1. ✘ డైబోరెన్
2. ✘ నీడ్ కార్బోరెన్
3. ✔ బోరజోల్
4. ✘ అరాక్నో పెంటా బోరెన్

Question Number : 89 Question Id : 79840723525 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following structural features of  $[\text{Re}_2\text{Cl}_8]^{2-}$  are correct

- A) They have short Re – Re distance than the normal Re – Re distance
- B) They possess eclipsed confirmation
- C) They possess staggered confirmation
- D) They have longer Re – Re distance than the normal Re – Re distance

Options :

1. ✘ B & D
2. ✘ A & C
3. ✘ C & D
4. ✔ A & B

Question Number : 89 Question Id : 79840723525 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది ఇవ్వబడిన  $[\text{Re}_2\text{Cl}_8]^{2-}$  నిర్మాణ లక్షణాలలో ఏవి సరియైనవి

- A) సాధారణ Re – Re దూరం కంటే తక్కువ Re – Re దూరం ఉంటుంది
- B) గ్రహణ అనురూపకం ఉంటుంది
- C) అస్తవ్యస్త అనురూపకం ఉంటుంది
- D) సాధారణ Re – Re దూరం కంటే ఎక్కువ Re – Re దూరం ఉంటుంది

Options :

1. ✘ B & D
2. ✘ A & C
3. ✘ C & D
4. ✔ A & B



Question Number : 90 Question Id : 79840723526 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The number of Mo – Mo bonds in the hexa nuclear metal cluster  $[\text{Mo}_6\text{Cl}_8]^{4+}$  is

Options :

1. ✘ 8
2. ✘ 10
3. ✔ 12
4. ✘ 16

Question Number : 90 Question Id : 79840723526 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

షట్ కేంద్రిత లోహ గుచ్ఛము (metal cluster)  $[\text{Mo}_6\text{Cl}_8]^{4+}$  లోని Mo – Mo బంధాల సంఖ్య

Options :

1. ✘ 8
2. ✘ 10
3. ✔ 12
4. ✘ 16

Question Number : 91 Question Id : 79840723527 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The bond order of each Nb – Nb bond in the metal cluster  $[\text{Nb}_6\text{Cl}_{12}]^{2+}$  is

Options :

1. ✘ 1/2
2. ✔ 2/3
3. ✘ 2
4. ✘ 3

Question Number : 91 Question Id : 79840723527 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

$[\text{Nb}_6\text{Cl}_{12}]^{2+}$  లోహ గుచ్ఛము (metal cluster ) లోని ప్రతి Nb – Nb బంధపు బంధ క్రమము :

Options :

1. ✘ 1/2
2. ✔ 2/3
3. ✘ 2
4. ✘ 3

Question Number : 92 Question Id : 79840723528 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the binding of oxygen to myoglobin, the relationship between the concentration of oxygen and the fraction of binding sites occupied, can be described as

Options :

1. ✘ Sigmoidal
2. ✘ Linear with negative slope
3. ✘ Linear with positive slope
4. ✔ Hyperbolic

Question Number : 92 Question Id : 79840723528 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

మైయోగ్లోబిన్ తో ఆక్సిజన్ బంధం లో , ఆక్సిజన్ గాఢతకు మరియు బంధింప బడే ప్రదేశాలలో ఆక్రమించబడిన  
భాగానికి మధ్య సంబంధాన్ని ఈ క్రింది విధముగా వర్ణిస్తారు

Options :

1. ✘ సిగ్మాయిడల్
2. ✘ ఋణాత్మక వాలు గల సరళ రేఖ
3. ✘ ధనాత్మక వాలు గల సరళ రేఖ
4. ✔ హైపర్బోలిక్

Question Number : 93 Question Id : 79840723529 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In oxy-hemoglobin, the iron centre is best described as

Options :

1. ✘ High spin Fe (III)
2. ✘ High spin Fe (II)
3. ✘ Low spin Fe (III)
4. ✔ Low spin Fe (II)

Question Number : 93 Question Id : 79840723529 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఆక్సి హిమోగ్లోబిన్ లో ఉత్తమంగా వర్ణింపబడిన అయాన్ కేంద్రము

Options :

1. ✖ అధిక భ్రమణ Fe (III)
2. ✖ అధిక భ్రమణ Fe (II)
3. ✖ అల్ప భ్రమణ Fe (III)
4. ✔ అల్ప భ్రమణ Fe (II)

Question Number : 94 Question Id : 79840723530 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The changes which occur when O<sub>2</sub> bonds to Hemerythrin are

- A) One iron atom is oxidized
- B) Both the iron atoms are oxidized
- C) O<sub>2</sub> binds to one iron atom and is also hydrogen bonded
- D) O<sub>2</sub> binds to both the iron atoms and is also hydrogen bonded

Options :

1. ✔ B & C
2. ✖ B & D
3. ✖ A & D
4. ✖ A & C

Question Number : 94 Question Id : 79840723530 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

హెమెరిత్రిన్ లో O<sub>2</sub> బంధ మేర్పరచినపుడు జరుగు మార్పులు

- A) ఒక ఐరన్ పరమాణువు అక్సీకరించబడును
- B) రెండు ఐరన్ పరమాణువులు అక్సీకరించబడును
- C) ఒక ఐరన్ పరమాణువు తో O<sub>2</sub> బంధం ఏర్పరుస్తుంది మరియు హైడ్రోజన్ బంధాన్ని కలిగి ఉంటుంది
- D) రెండు ఐరన్ పరమాణువు ల తో O<sub>2</sub> బంధం ఏర్పరుస్తుంది మరియు హైడ్రోజన్ బంధాన్ని కలిగి ఉంటుంది

Options :

1. ✔ B & C
2. ✖ B & D
3. ✖ A & D
4. ✖ A & C

Question Number : 95 Question Id : 79840723531 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Deoxy-Hemocyanin is

Options :

1. ✘ Heme protein and paramagnetic
2. ✔ Colorless and diamagnetic
3. ✘ O<sub>2</sub> transport protein and paramagnetic
4. ✘ Blue colored and diamagnetic

Question Number : 95 Question Id : 79840723531 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

డీ ఆక్సి - హెమోసైనిన్ :

Options :

1. ✘ హీమ్ ప్రోటీన్ మరియు పరాలయస్కాంత పదార్థము
2. ✔ రంగులేని మరియు డయాస్కాంత పదార్థము
3. ✘ O<sub>2</sub> ను బదిలీ చేయు ప్రోటీన్ మరియు పరాలయస్కాంత పదార్థము
4. ✘ నీలి రంగు మరియు డయాస్కాంత పదార్థము

Question Number : 96 Question Id : 79840723532 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct descending order of the eluting power of the solvents in column chromatography

Options :

1. ✔ water, ethanol, chloroform, benzene
2. ✘ ethanol, chloroform, benzene, water
3. ✘ benzene, CHCl<sub>3</sub>, ethanol, water
4. ✘ benzene, water, chloroform, ethanol

Question Number : 96 Question Id : 79840723532 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

కాలమ్ క్రోమాటోగ్రఫీ లో ద్రావణుల నిక్షాలన శక్తి యొక్క సరియైన అవరోహణ క్రమం

Options :

1. ✔ నీరు , ఇథనాల్ , క్లోరోఫాం , బెంజిన్
2. ✘ ఇథనాల్, క్లోరోఫాం , బెంజిన్, నీరు
3. ✘ బెంజిన్, క్లోరోఫాం , ఇథనాల్,, నీరు
4. ✘ బెంజిన్,, నీరు, క్లోరోఫాం, ఇథనాల్.

Question Number : 97 Question Id : 79840723533 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

What is the maximum  $R_f$  value for any molecule in paper chromatography

Options :

1. ✘ 0.1
2. ✔ 1.0
3. ✘ 10.0
4. ✘ Infinity

Question Number : 97 Question Id : 79840723533 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

పేపర్ క్రోమటోగ్రఫీ లో ఏ అణువు కైనా ఉంటే అదిక  $R_f$  విలువ ఎంత

Options :

1. ✘ 0.1
2. ✔ 1.0
3. ✘ 10.0
4. ✘ Infinity

Question Number : 98 Question Id : 79840723534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The locating agent used to detect Lipids in thin layer chromatography

Options :

1. ✘ bromine vapors
2. ✘ Ninhydrin
3. ✘ ferric chloride
4. ✔ Rhodamine B

Question Number : 98 Question Id : 79840723534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

పలుచని పోర క్రోమటోగ్రఫీ లో లిపిడ్ లను గుర్తించుటకు ఉపయోగపడు స్థాన నిర్ధారణ కారకము

Options :

1. ✘ ట్రోమిన్ ఆవిర్లు
2. ✘ నిన్ హైడ్రీన్

3. ✖ పెరిక్ క్లోరైడ్

4. ✔ రోడమిన్ B

Question Number : 99 Question Id : 79840723535 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

Which of the following gases is unsuitable for use as a GC carrier gas

Options :

1. ✖ N<sub>2</sub>

2. ✖ Helium

3. ✔ Oxygen

4. ✖ Hydrogen

Question Number : 99 Question Id : 79840723535 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఈ క్రింది వాయువులలో ఏది GC వాహక వాయువు గా వాడుటకు పనికి రాదు

Options :

1. ✖ N<sub>2</sub>

2. ✖ హీలియం

3. ✔ ఆక్సిజన్

4. ✖ హైడ్రోజన్

Question Number : 100 Question Id : 79840723536 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

In reversed phase HPLC, there is a

Options :

1. ✖ Non polar solvent / polar column

2. ✔ Polar solvent / non polar column

3. ✖ Non polar solvent / non polar column

4. ✖ Polar solvent / polar column

Question Number : 100 Question Id : 79840723536 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఫ్లోమ్ (reverse) ప్రావస్థ HPLC లో ఉండునది

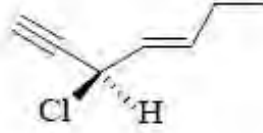
Options :

1. ✖ అధువ ద్రావణి / ధువ కాలం
2. ✔ ధువ ద్రావణి / అధువ కాలం
3. ✖ అధువ ద్రావణి / అధువ కాలం
4. ✖ ధువ ద్రావణి / ధువ కాలం

Question Number : 101 Question Id : 79840723537 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The IUPAC name of the following compound is



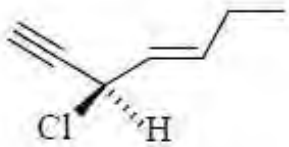
Options :

1. ✖ (E, 5S)-5-chloro-3-heptene-6-yne
2. ✖ (E, 5R)-5-chloro-3-heptene-6-yne
3. ✖ (E, 3S)-3-chloro-4-heptene-1-yne
4. ✔ (E, 3R)-3-chloro-4-heptene-1-yne

Question Number : 101 Question Id : 79840723537 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది పదార్థ IUPAC నామము



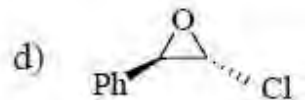
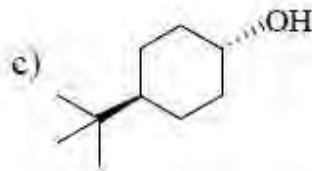
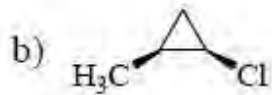
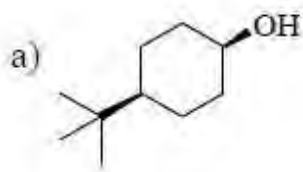
Options :

1. ✖ (E, 5S)-5-క్లోరో -3-హెప్టేన్ -6-ఐన్
2. ✖ (E, 5R)-5- క్లోరో -3-హెప్టేన్ -6-ఐన్
3. ✖ (E, 3S)-3- క్లోరో -4- హెప్టేన్ -1- ఐన్
4. ✔ (E, 3R)-3- క్లోరో -4- హెప్టేన్ -1- ఐన్

Question Number : 102 Question Id : 79840723538 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following molecules are chiral?



Options :

1.  a & d

2.  c & d

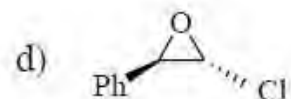
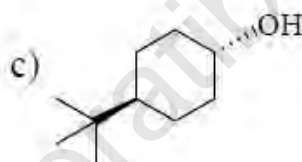
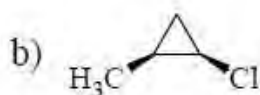
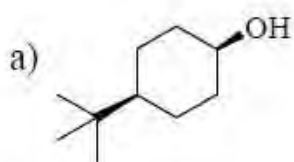
3.  b & c

4.  b & d

Question Number : 102 Question Id : 79840723538 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది అణువులలో ఏది కైరల్ ?



Options :

1.  a & d

2.  c & d

3.  b & c

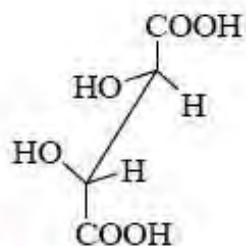
4.  b & d

Question Number : 103 Question Id : 79840723539 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

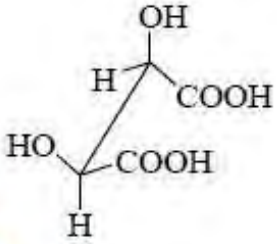
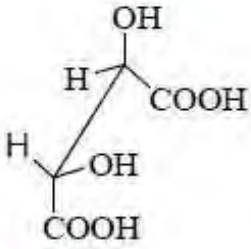
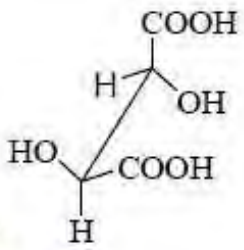
Which of the following represents D-Tartaric acid?

Options :



1.



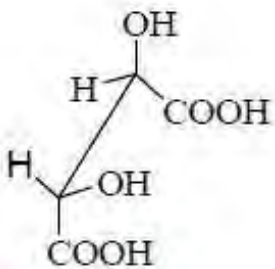
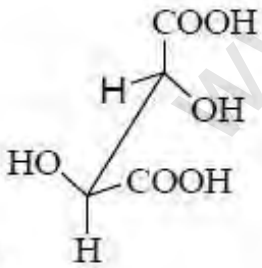
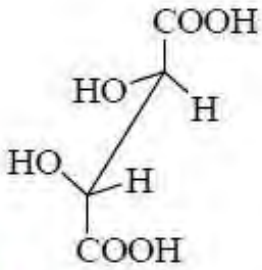


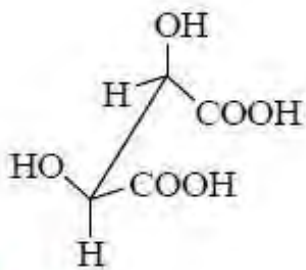
Question Number : 103 Question Id : 79840723539 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వానిలో ఏది D-టార్టారిక్ ఆమ్లమును సూచిస్తుంది ?

Options :



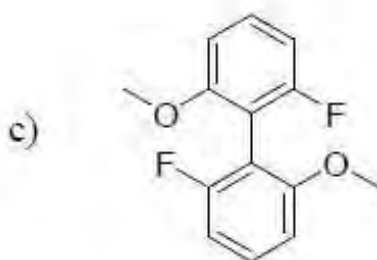
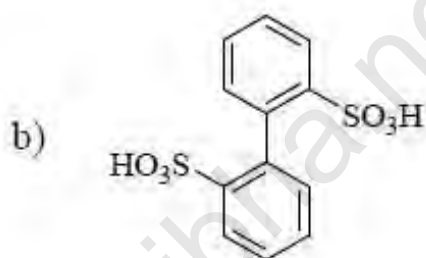
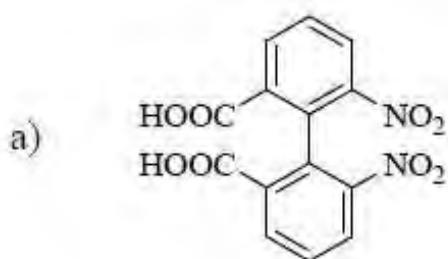


4. ✖

Question Number : 104 Question Id : 79840723540 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following chiral molecules are resolvable into d- and l-isomers?



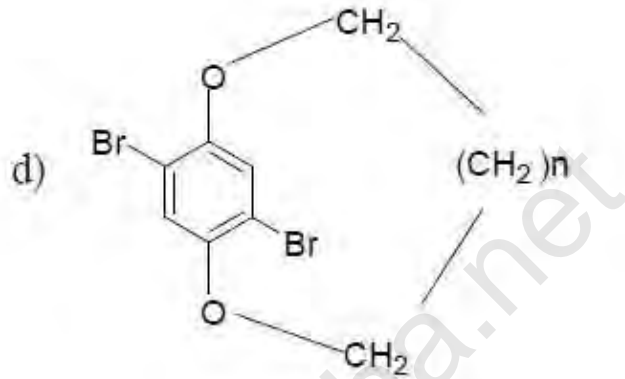
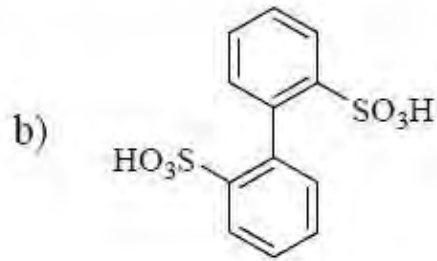
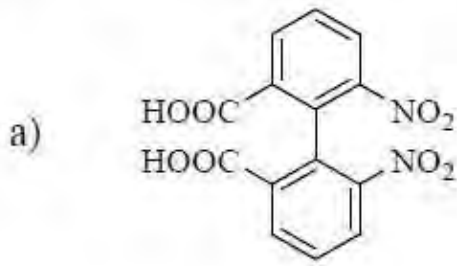
Options :

1. ✔ a, b & d
2. ✖ a, c & d
3. ✖ c & d
4. ✖ a & c

Question Number : 104 Question Id : 79840723540 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది కైరల్ అణువులలో d- మరియు l - సదృశ్యకాలు (isomers) గా ఏవి వేరు పడగలవు ?



Options :

1.  a, b & d
2.  a, c & d
3.  c & d
4.  a & c

Question Number : 105 Question Id : 79840723541 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The reaction of S-(+)-1-Iodo-2-methylbutane with hydroxide ion forms (-)-2-methyl-1-butanol, which on mild oxidation gave (+)-2-methylbutanoic acid. The configuration of (+)-2-methyl-1-butanol and (-)-2-methylbutanoic acid respectively is :

Options :

1.  R, R
2.  S, S
3.  R, S
4.  S, R

Question Number : 105 Question Id : 79840723541 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

హైడ్రాక్సైడ్ ఆయన తో S-(+)-1-అయోడ్ -2- మిడైల్ బ్యూటేన్ చర్య వల్ల ఏర్పడు (-)-2- మిడైల్ -1-బ్యూటనోల్ ,  
 మృదులంగా ఆక్సికరణం చెంది (+)-2-మిడైల్ బ్యూటనోల్ ఆమ్లాన్నిస్తుంది . (+)-2-మిడైల్ -1- బ్యూటనోల్ మరియు (-)-  
 2- మిడైల్ బ్యూటనోల్ ఆమ్లాలు వరుసగా :

Options :

1. ✘ R, R
2. ✔ S, S
3. ✘ R, S
4. ✘ S, R

Question Number : 106 Question Id : 79840723542 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The  $^1\text{H-NMR}$  spectrum of 4- t-butylcyclohexylacetate (A) displayed  $J_{1,2}$  values as 11 & 4 Hz and that of 1,2-dichloroethene (B) as 5.3 Hz. The A & B are

Options :

1. ✘ Both A and B are cis isomers
2. ✘ Both A and B are trans isomers
3. ✘ A is cis isomer, B is trans isomer
4. ✔ A is trans isomer. B is cis isomer

Question Number : 106 Question Id : 79840723542 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

4- t-బ్యూటైల్ సైక్లో హెక్సైల్ ఎసిటేట్ (A)  $^1\text{H-NMR}$  వర్ణ పటములో ప్రదర్శించు  $J_{1,2}$  విలువలు 11 & 4 Hz మరియు 1,2-డైక్లోరో ఈథేన్ (B) , 5.3 Hz. గా ప్రదర్శిస్తుంది A & B లు వరుసగా

Options :

1. ✘ A మరియు B రెండు సిస్ ఐసోమర్లు
2. ✘ A మరియు B రెండు ట్రాన్స్ ఐసోమర్లు
3. ✘ A సిస్ ఐసోమర్, B is ట్రాన్స్ ఐసోమర్
4. ✔ A ట్రాన్స్ ఐసోమర్, B సిస్ ఐసోమర్

Question Number : 107 Question Id : 79840723543 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Match the compounds in List-I with its class in List-II.

List-I

- a. Phenyl vinyl ether
- b. Pentalene
- c. Cyclopropenyl cation

List-II

- i. Non-alternant
- ii. Homo aromatic
- iii. Anti-aromatic
- iv. Cross conjugated

The correct answer is

Options :

- |      |      |       |       |
|------|------|-------|-------|
| 1. ✘ | a-iv | b-ii  | c-iii |
| 2. ✔ | a-iv | b-iii | c-i   |
| 3. ✘ | a-ii | b-iv  | c-i   |
| 4. ✘ | a-ii | b-i   | c-iv  |

Question Number : 107 Question Id : 79840723543 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

జాబితా -I లోని పదార్థాలను జాబితా -II లోని వాటి వర్గాలతో జతపరచండి .

జాబితా -I

జాబితా -II

- |                               |                         |
|-------------------------------|-------------------------|
| a. ఫినైల్ వినైల్ ఈథర్         | i. ఏకాంత రకము కానిది    |
| b. పెంటాలెన్                  | ii. హోమో యారోమాటిక్     |
| c. సైక్లోప్రోపెనిల్ క్యాటయాన్ | iii. యాంటి - యారోమాటిక్ |
|                               | iv. వ్యత్యస్త సంయుగ్మం  |

సరైన సమాధానము

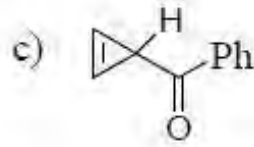
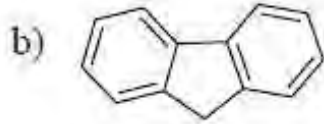
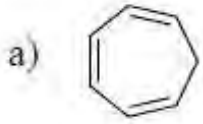
Options :

- |      |      |          |       |
|------|------|----------|-------|
| 1. ✘ | a-iv | b-ii     | c-iii |
| 2. ✔ | a-iv | b-iii    | c-i   |
| 3. ✘ | a-ii | b-ivc-i  |       |
| 4. ✘ | a-ii | b-i c-iv |       |

Question Number : 108 Question Id : 79840723544 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In which of the following methylene/methine protons are acidic ?



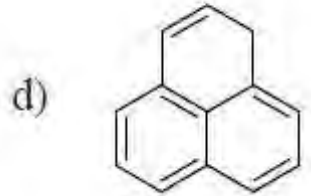
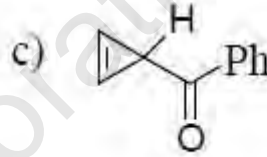
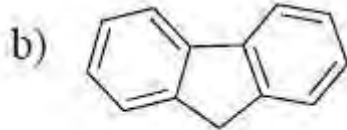
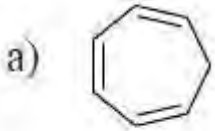
Options :

- ✘ a & c
- ✘ a, b & d
- ✘ b & c
- ✔ b & d

Question Number : 108 Question Id : 79840723544 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది ఏ మిథిలీన్ / మిథైన్ ప్రోటాన్లు ఆమ్ల ప్రోటాన్లు ?



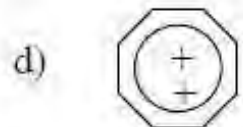
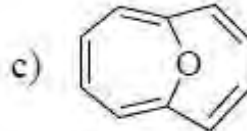
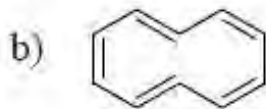
Options :

- ✘ a & c
- ✘ a, b & d
- ✘ b & c
- ✔ b & d

Question Number : 109 Question Id : 79840723545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following are aromatic?



Options :

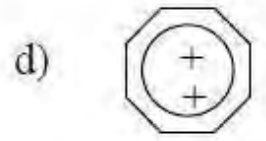
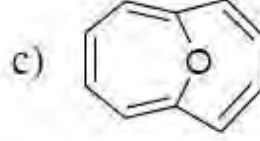
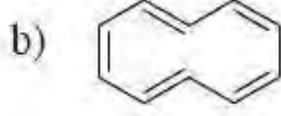
- ✔ c & d
- ✘ a & b
- ✘ a & c

4. ✘ b & d

Question Number : 109 Question Id : 79840723545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వాటిలో యారోమాటిక్ పదార్థాలు ఏవి ?



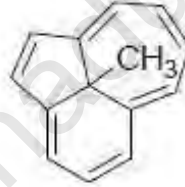
Options :

1. ✔ c & d
2. ✘ a & b
3. ✘ a & c
4. ✘ b & d

Question Number : 110 Question Id : 79840723546 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct statement with respect to the chemical shift of the protons in following compound is



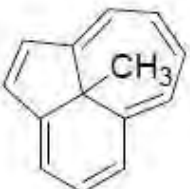
Options :

1. ✘ Methyl protons shielded and ethylenic protons are deshielded.
2. ✔ Methyl protons deshielded and ethylenic protons are shielded
3. ✘ Both are deshielded.
4. ✘ Both are shielded

Question Number : 110 Question Id : 79840723546 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది పదార్థము లోని ప్రోటానుల రసాయన స్థాన భ్రంశము (chemical shift) పరంగా సరియైన వివరణ



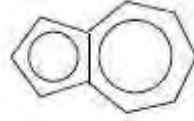
Options :

1. ✘ మిథైల్ ప్రోటాన్లు కప్పబడినవి, ఇథిలీన్ ప్రోటాన్లు కప్పబడలేదు .
2. ✔ మిథైల్ ప్రోటాన్లు కప్పబడలేదు మరియు ఇథిలీన్ ప్రోటాన్లు కప్పబడినవి
3. ✘ రెండూ కప్పబడలేదు .
4. ✘ రెండూ కప్పబడినవి

Question Number : 111 Question Id : 79840723547 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct statement regarding the following compound is



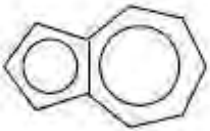
Options :

1. ✘ Electrophilic substitution takes place in both the rings.
2. ✘ Nucleophilic substitution takes place in both the rings.
3. ✔ Electrophilic substitution takes place in seven membered ring and nucleophilic substitution in five membered ring.
4. ✘ Nucleophilic substitution takes place in seven membered ring and electrophilic substitution in five membered ring.

Question Number : 111 Question Id : 79840723547 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది పదార్థం గురించి సరియైన వివరణ



Options :

1. ✘ రెండు వలయాలలో ఎలక్ట్రోఫిలిక్ ప్రతిక్షేపణ జరుగును .
2. ✘ రెండు వలయాలలో న్యూక్లిఫిలిక్ ప్రతిక్షేపణ జరుగును
3. ✔ సప్త సభ్య వలయం (seven membered ring ) లో ఎలక్ట్రోఫిలిక్ ప్రతిక్షేపణ, పంచ సభ్య వలయములో (five membered ring) న్యూక్లిఫిలిక్ ప్రతిక్షేపణ జరుగును.



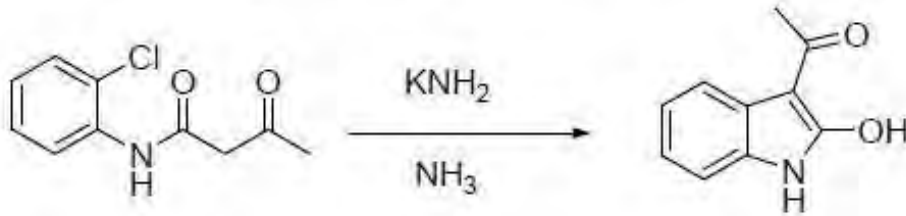
4. ✖

సప్త సభ్య వలయం (seven membered ring ) లో న్యూక్లిఫిలిక్ ప్రతిక్షేపణ పంచ సభ్య వలయములో (five membered ring) ఎలక్ట్రోఫిలిక్ ప్రతిక్షేపణ జరుగును.

Question Number : 112 Question Id : 79840723548 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The below reaction takes place through which of the following intermediates?



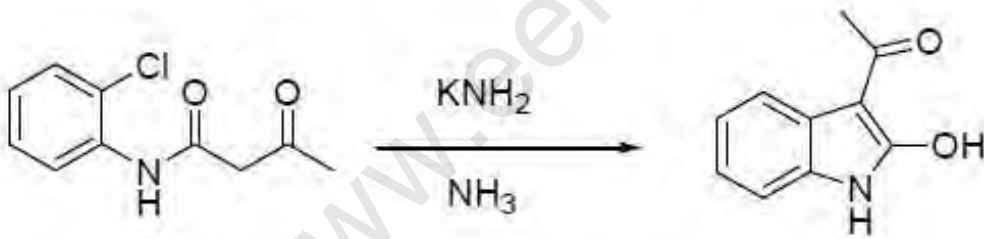
Options :

1. ✖ Carbanion, nitrene
2. ✔ Benzyne and carbanion
3. ✖ Benzyne and carbene
4. ✖ Free radical and Carbanion

Question Number : 112 Question Id : 79840723548 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది చర్య ఏ మధ్యస్థాల ద్వారా జరుగుతుంది



Options :

1. ✖ కార్బెనియాన్, నైట్రీన్
2. ✔ బెంజైన్, కార్బెనియాన్
3. ✖ బెంజైన్ మరియు కార్బీన్
4. ✖ ప్లీ రాడికల్, కార్బెనియాన్

Question Number : 113 Question Id : 79840723549 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following rearrangements takes place via the 5,5 sigmatropic shift ?

Options :

1. ✘ Claisen rearrangement
2. ✘ Sommelet-Hauser rearrangement
3. ✔ Benzidine rearrangement
4. ✘ Smiles rearrangement

Question Number : 113 Question Id : 79840723549 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది పునరమరికలలో ఏది 5,5 సిగ్మా ట్రాన్సిఫర్ స్థాన భ్రంశము (shift) ద్వారా జరుగుతుంది ?

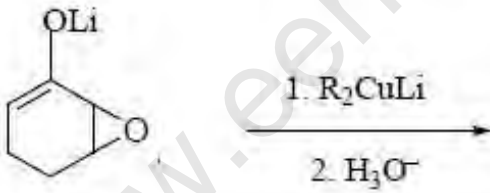
Options :

1. ✘ క్లైసెన్ పునరమరిక
2. ✘ నోప్లేట్ - హాసర్ పునరమరిక
3. ✔ బెంజిడిన్ పునరమరిక
4. ✘ స్మైల్స్ పునరమరిక

Question Number : 114 Question Id : 79840723550 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

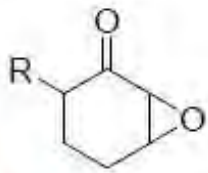
The major product formed in the following reaction is



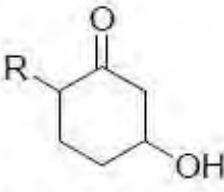
Options :

1. ✘
2. ✘

3. ✖

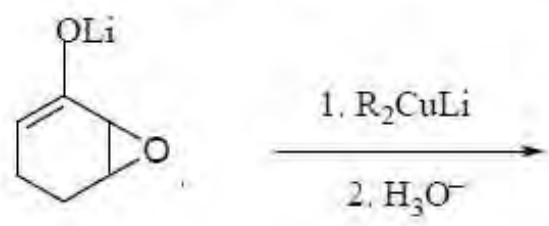


4. ✔



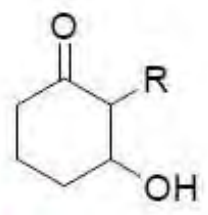
Question Number : 114 Question Id : 79840723550 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

ఈ క్రింది చర్యలో ఏర్పడు ప్రధాన క్రియాజన్యం

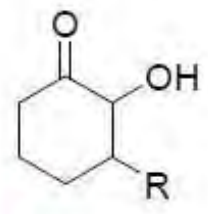


Options :

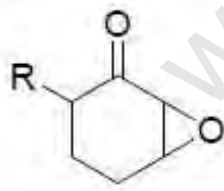
1. ✖



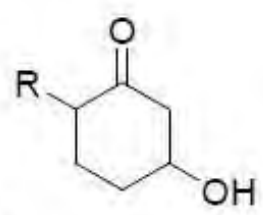
2. ✖



3. ✖



4. ✔



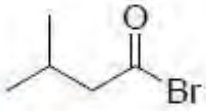
Question Number : 115 Question Id : 79840723551 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

An organic compound (A) with the molecular formula  $C_5H_9OBr$  on reaction with sodium methoxide in methanol gave (B).  $^1H-NMR$  of 'B' displayed signals at  $\delta$  1.20 (s, 9H), 3.67 (s, 3H) and the IR spectrum showed the absorption band at  $1745\text{ cm}^{-1}$ . The structure of 'A' is

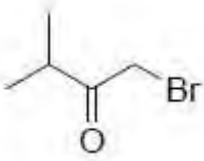
Options :



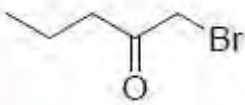
1. ✘



2. ✘



3. ✔



4. ✘

Question Number : 115 Question Id : 79840723551 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

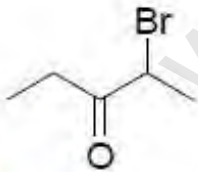
Correct : 2 Wrong : 0.66

$C_5H_9OBr$  అణు సంకేతము గల సెంద్రియ పదార్థం (A) మిథనోల్ లో నోడియం మిథాక్సైడ్ తో చర్య నొంది 'B' నిస్తుంది.

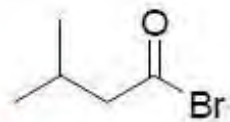
'B' యొక్క  $^1H-NMR$ ,  $\delta$  1.20 (s, 9H), 3.67 (s, 3H) వద్ద సిగ్నల్లు ప్రదర్శిస్తుంది. IR వర్ణ పటం  $1745\text{ cm}^{-1}$  వద్ద

శోషణ పట్టీ (absorption band) ని చూపుతుంది. 'A' నిర్మాణం

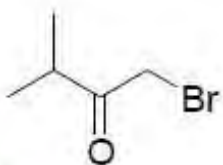
Options :



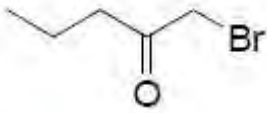
1. ✘



2. ✘



3. ✔

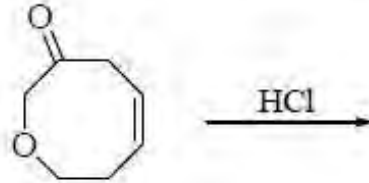


4. ✖

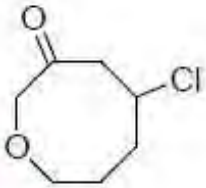
Question Number : 116 Question Id : 79840723552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

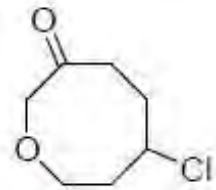
The major product formed in the following reaction is



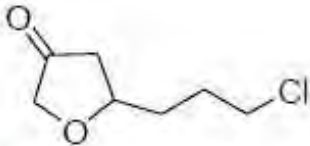
Options :



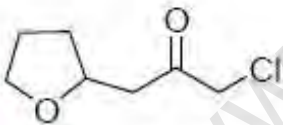
1. ✖



2. ✖



3. ✔

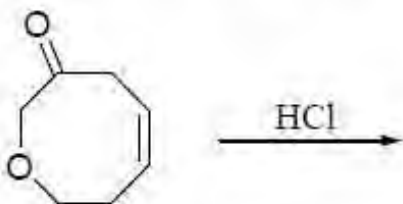


4. ✖

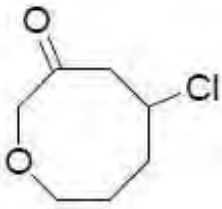
Question Number : 116 Question Id : 79840723552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

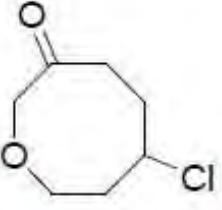
క్రింది చర్యలో ఏర్పడు ప్రధాన క్రియాజన్యం



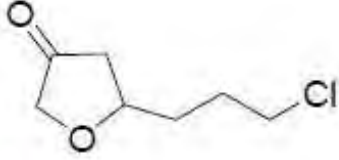
Options :



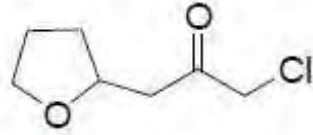
1. ✖



2. ✖



3. ✔



4. ✖

Question Number : 117 Question Id : 79840723553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

2-Bromo-2-methylbutane with  $\text{KOBU}^t$  undergoes which of the following reactions ?

Options :

1. ✔ E2- Elimination

2. ✖ E1- Elimination

3. ✖  $\text{S}_{\text{N}}1$  Reaction

4. ✖  $\text{S}_{\text{N}}2$  Reaction

Question Number : 117 Question Id : 79840723553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

2-బ్రోమో -2-మిథైల్ బ్యూటేన్ ,  $\text{KOBU}^t$  తో క్రింది ఏ చర్యలో పాల్గొనును ?

Options :

1. ✔ E2- విలోపనం

2. ✖ E1- విలోపనం

3. ✖  $\text{S}_{\text{N}}1$  చర్య

4. ✖  $\text{S}_{\text{N}}2$  చర్య

Question Number : 118 Question Id : 79840723554 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following statement is not correct regarding the elimination reactions?

Options :

1. ✘  $\alpha$ -Aryl groups favour E1- Eliminations.
2. ✔ Poor leaving groups will shift the mechanism towards E2- Elimination.
3. ✘ Better leaving groups will shift the mechanism towards E1-Elimination.
4. ✘ Withdrawing groups in the  $\beta$ -position will shift the mechanism to E1cB.

Question Number : 118 Question Id : 79840723554 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

విలోపన చర్యల పరంగా క్రింది వివరణలలో ఏది సరియైనది కాదు ?

Options :

1. ✘  $\alpha$ -ఎలైల్ సమూహాలు E1- విలోపనాలను దోహదపరుస్తాయి.
2. ✔ మంద విలోపన సమూహాలు (poor leaving groups ) చర్య విధానాన్ని E2- విలోపనం వైపు మారుస్తాయి .
3. ✘ మంచి విలోపన సమూహాలు (better leaving groups ) చర్య విధానాన్ని E1- విలోపనం వైపు మారుస్తాయి .
4. ✘  $\beta$ -స్థానలో ఉన్న ఆకర్షక సమూహాలు (withdrawing groups ) చర్య విధానాన్ని E1cB వైపు మారుస్తాయి

Question Number : 119 Question Id : 79840723555 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the following reaction sequence 'A' and 'B' respectively are



Options :

1. ✘ Racemic 3,4-dibromohexane . Z-3-Bromo-3-hexene.
2. ✘ Racemic 3,4-dibromohexane . E-3-Bromo-3-hexene
3. ✘ Meso 3,4-dibromohexane . E--3-hexene
4. ✔ Meso 3,4-dibromohexane . E-3-Bromo-3-hexene

Question Number : 119 Question Id : 79840723555 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది చర్యా క్రమము లో 'A' మరియు 'B' లు వరుసగా



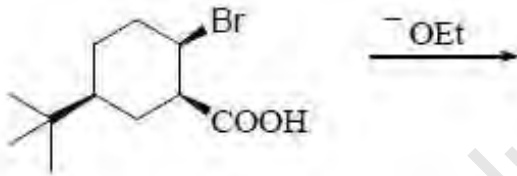
Options :

1. ✖ రేసిమిక్ 3,4- డైబ్రోమోహెక్సేన్ , Z-3-బ్రోమో-3-హెక్సేన్.
2. ✖ రేసిమిక్ 3,4- డైబ్రోమోహెక్సేన్ , E-3-బ్రోమో-3-హెక్సేన్.
3. ✖ మీనో 3,4- డైబ్రోమోహెక్సేన్ , E-3- హెక్సేన్
4. ✔ మీనో 3,4- డైబ్రోమోహెక్సేన్ , E-3-బ్రోమో-3-హెక్సేన్

Question Number : 120 Question Id : 79840723556 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The major product from the following reaction is



Options :

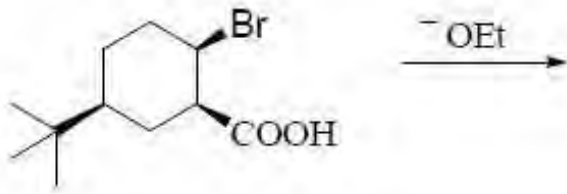
1. ✖
2. ✖
3. ✖
4. ✔

Question Number : 120 Question Id : 79840723556 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66



క్రింది చర్య లో ఏర్పడు ప్రధాన క్రియాజన్యము



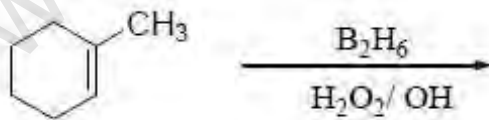
Options :

1.
2.
3.
4.

Question Number : 121 Question Id : 79840723557 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The major product and the stereochemistry of the addition of the following reaction are



Options :

1.  Trans-2-methylcyclohexanol. Anti.
2.  Cis-2-methylcyclohexanol. Anti
3.  Trans-2-methylcyclohexanol. Syn
4.  Cis-2-methylcyclohexanol. Syn

Question Number : 121 Question Id : 79840723557 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింది చర్య లో ప్రధాన క్రియాజన్యం, సంకలనం యొక్క త్రిమితీయ రసాయన శాస్త్రము



Options :

1. ✘ ట్రాన్స్ -2-మిథైల్ సైక్లో హెక్సేనల్, ఏంటి .
2. ✘ సిస్ -2-మిథైల్ సైక్లో హెక్సేనల్, ఏంటి
3. ✔ ట్రాన్స్ -2-మిథైల్ సైక్లో హెక్సేనల్, సిస్
4. ✘ సిస్ -2-మిథైల్ సైక్లో హెక్సేనల్, సిస్

Question Number : 122 Question Id : 79840723558 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The major product from the reaction of Erythro-2-bromo-3-deuterobutane with base is( ignoring kinetic isotope effect)

Options :

1. ✔ Trans-2-butene
2. ✘ Cis-2-butene
3. ✘ Deuterated-Trans-2-butene
4. ✘ Deuterated-Cis-2-butene

Question Number : 122 Question Id : 79840723558 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

కారంతో ఎరిత్రో -2-బ్రోమో -3-డ్యూటీరో బ్యూటేన్ చర్యలో ప్రధాన క్రియాజన్యం (గతిజ సమతా స్థితి ప్రభావం విస్మరించండి )

Options :

1. ✔ ట్రాన్స్ -2- బ్యూటీన్
2. ✘ సిస్ -2- బ్యూటీన్
3. ✘ డ్యూటీరేటెడ్ - ట్రాన్స్ -2- బ్యూటీన్
4. ✘ డ్యూటీరేటెడ్ - ట్రాన్స్ -2- బ్యూటీన్

Question Number : 123 Question Id : 79840723559 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The reactants required to prepare 3-ethyl indole are

Options :

1. ✘  $\text{PhNH}_2 + \text{OHCCH}_2\text{CH}_2\text{CH}_3$
2. ✔  $\text{PhNH}_2\text{NH}_2 + \text{OHCCH}_2\text{CH}_2\text{CH}_3$
3. ✘  $\text{PhNH}_2\text{NH}_2 + \text{OHCCH}_2\text{CH}_3$
4. ✘  $\text{PhCHO} + \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{NHNH}_2$

Question Number : 123 Question Id : 79840723559 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

3-ఇథైల్ ఇండోల్ ను తయారుచేయటానికి అవసరమగు క్రియజనకాలు

Options :

1. ✘  $\text{PhNH}_2 + \text{OHCCH}_2\text{CH}_2\text{CH}_3$
2. ✔  $\text{PhNH}_2\text{NH}_2 + \text{OHCCH}_2\text{CH}_2\text{CH}_3$
3. ✘  $\text{PhNH}_2\text{NH}_2 + \text{OHCCH}_2\text{CH}_3$
4. ✘  $\text{PhCHO} + \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{NHNH}_2$

Question Number : 124 Question Id : 79840723560 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The correct statement regarding the dipole moment of pyridine (A) and pyrrole (b) is

Options :

1. ✘ In both A and B nitrogen is the negative end of dipole
2. ✘ In both A and B nitrogen is the positive end of dipole
3. ✔ In 'A' nitrogen is the negative end and in 'B' it is the positive end of dipole
4. ✘ In 'A' nitrogen is the positive end and in 'B' it is the negative end of dipole

Question Number : 124 Question Id : 79840723560 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

పిరిడిన్ (A) మరియు పిరోల్ (B) ల ద్విధ్రువ భ్రామకాల గురించి సరియైన వివరణ

Options :

1. ✘ A మరియు B లలో నైట్రోజన్ ద్విధ్రువపు ఋణాత్మక చివరలో ఉంటుంది
2. ✘ A మరియు B లలో నైట్రోజన్ ద్విధ్రువపు ధనాత్మక చివరలో ఉంటుంది
3. ✔ నైట్రోజన్ 'A' లో ద్విధ్రువపు ఋణాత్మక చివరలో, 'B' లో ద్విధ్రువపు ధనాత్మక చివరలో ఉంటుంది

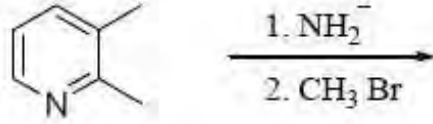
4. ✖

నైట్రిజన్ 'A' లో ద్వైత్రువపు ధనాత్మక చివరలో, 'B' లో ద్వైత్రువపు ఋణాత్మక చివరలో ఉంటుంది

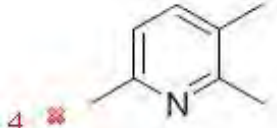
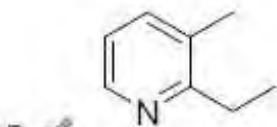
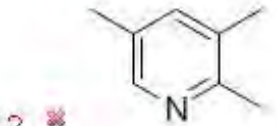
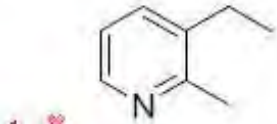
Question Number : 125 Question Id : 79840723561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The major product from the following reaction is



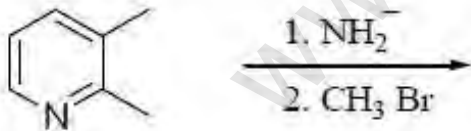
Options :



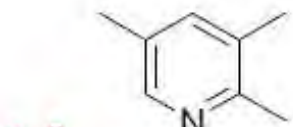
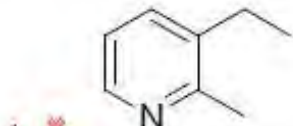
Question Number : 125 Question Id : 79840723561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

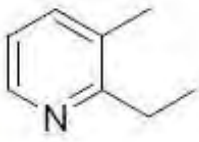
క్రింది చర్యలో ప్రధాన క్రియాజన్యం



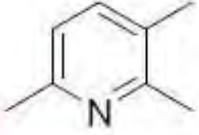
Options :



3. ✓



4. ✗



Question Number : 126 Question Id : 79840723562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Match the compounds in List-I with chemical shifts of proton at C-2 (H-C2) in List-II.

List-I	List-II
a. Pyrrole	i. 2.8
b. Pyridine	ii. 6.4
c. Pyrrolidine	iii. 8.5

The correct answer is

Options :

- |      |       |       |       |
|------|-------|-------|-------|
| 1. ✗ | a-ii  | b-i   | c-iii |
| 2. ✗ | a-i   | b-ii  | c-iii |
| 3. ✓ | a-ii  | b-iii | c-i   |
| 4. ✗ | a-iii | b-ii  | c-i   |

Question Number : 126 Question Id : 79840723562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

జాబితా -I లోని పదార్థాలను , జాబితా -II లోని C-2 వద్ద ఉన్న ప్రోటాన్ (H-C2) రసాయనిక స్థాన ప్రంశము (chemical shift) విలువలతో జతపరచండి.

జాబితా -I

- పిరోల్
- పిరిడిన్
- పిరోలిడిన్

జాబితా -II

- 2.8
- 6.4
- 8.5

సరియైన సమాధానం

Options :

- |      |      |       |       |
|------|------|-------|-------|
| 1. ✗ | a-ii | b-i   | c-iii |
| 2. ✗ | a-i  | b-ii  | c-iii |
| 3. ✓ | a-ii | b-iii | c-i   |

4. ✖ a-iii

b-ii

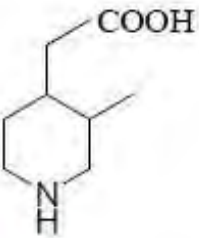
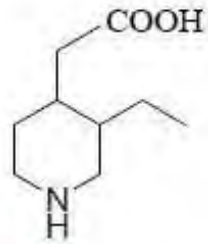
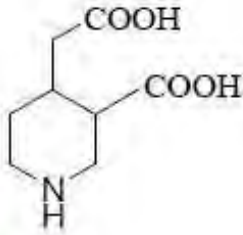
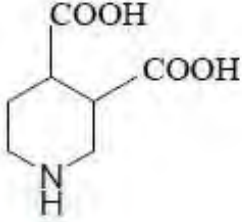
c-i

Question Number : 127 Question Id : 79840723563 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Meroquinene on oxidation with cold acidified permanganate gives

Options :

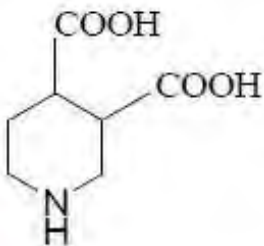


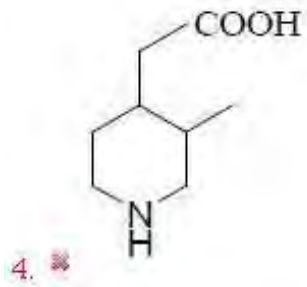
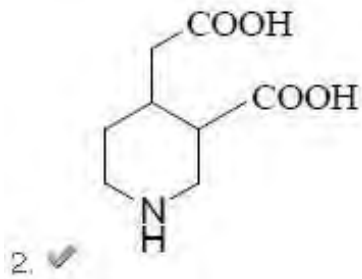
Question Number : 127 Question Id : 79840723563 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

మేరిక్వినిన్, చల్లని ఆమ్లిక్రూత పర్మంగానేట్ తో అక్సికరణం చెంది ఇచ్చునది

Options :





Question Number : 128 Question Id : 79840723564 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The Anti TB drug, Isoniazid is derivative of which of the following heterocyclic compound?

Options :

1. ✓ Pyridine

2. ✗ Indole

3. ✗ Quinoline

4. ✗ Pyrrole

Question Number : 128 Question Id : 79840723564 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

యాంటీ TB ఔషధం, ఇసోనియాజిడ్, క్రింది ఏ విషయ కృంఖల వలయ (hetero cyclic) పదార్థపు ఉత్పన్నము

Options :

1. ✓ పిరడిన్

2. ✗ ఇండోల్

3. ✗ క్వినోలీన్

4. ✗ పిరోల్

Question Number : 129 Question Id : 79840723565 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Camphor belongs to which of the following group of bicyclic monoterpenids?

Options :

1. ✘ Carane
2. ✘ Norbornane
3. ✔ Bornane
4. ✘ Pinane

Question Number : 129 Question Id : 79840723565 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

కర్పూరం (Camphor) క్రింది ఏ ద్వివలయ మొనోటర్పెనిడ్ సమూహానికి చెందును

Options :

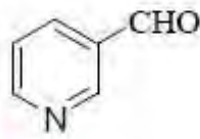
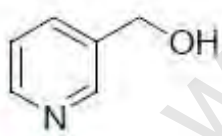
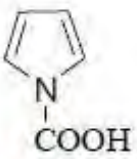
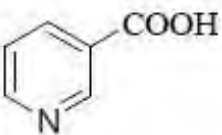
1. ✘ కార్నేస్
2. ✘ నార్ బోర్నేస్
3. ✔ బోర్నేస్
4. ✘ పినేస్

Question Number : 130 Question Id : 79840723566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The product obtained from oxidation of nicotine with chromic acid is

Options :

1. ✘ 
2. ✘ 
3. ✘ 
4. ✔ 

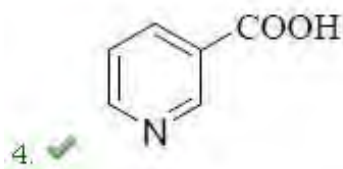
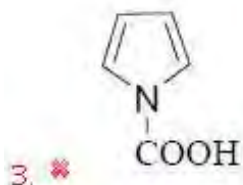
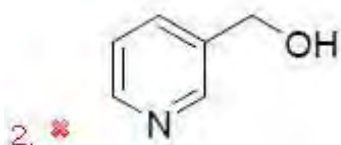
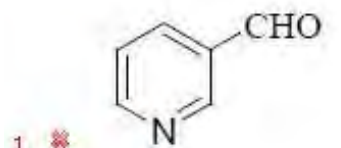
Question Number : 130 Question Id : 79840723566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66



క్రోమిక్ ఆమ్లముతో నికోటిన్ ఆక్సీకరణం నుండి లభించు క్రియాజన్యం

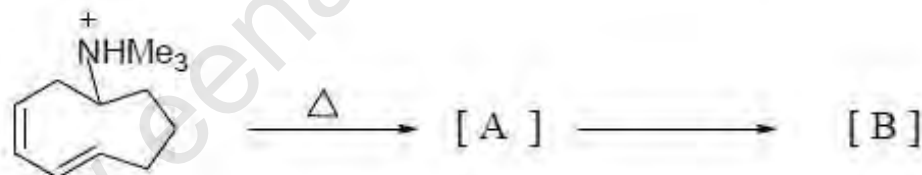
Options :



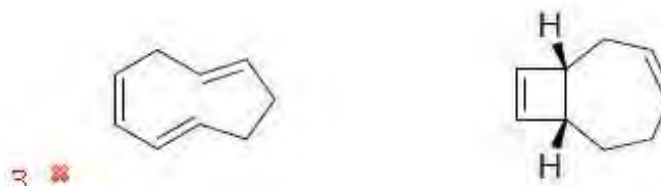
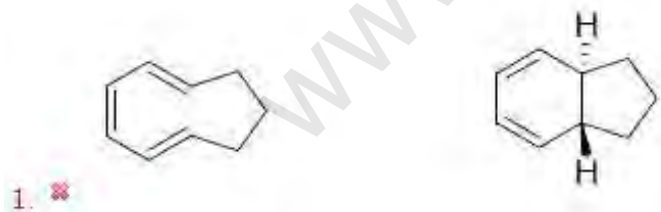
Question Number : 131 Question Id : 79840723567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

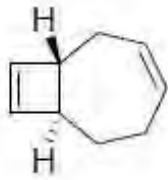
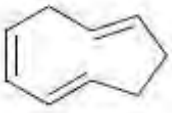
Correct : 2 Wrong : 0.66

In the following reaction sequence 'A' and 'B' respectively are



Options :



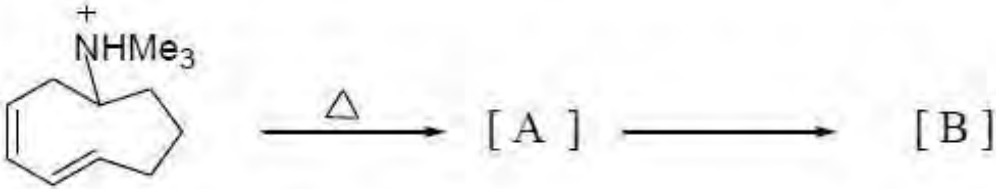


4. ✘

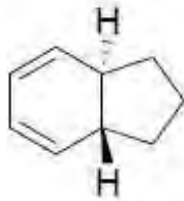
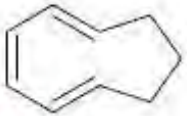
Question Number : 131 Question Id : 79840723567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

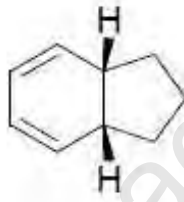
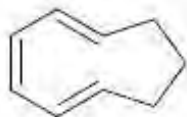
క్రీంద్ర చర్య క్రమములో, 'A' మరియు 'B' లు వరుసగా



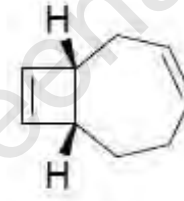
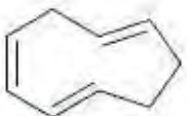
Options :



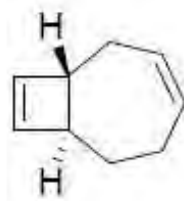
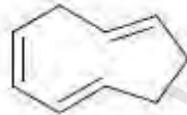
1. ✘



2. ✔



3. ✘



4. ✘

Question Number : 132 Question Id : 79840723568 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The following conversion of 'A' to 'B' involves two electrocyclic reactions.



The conditions required for the conversions respectively are

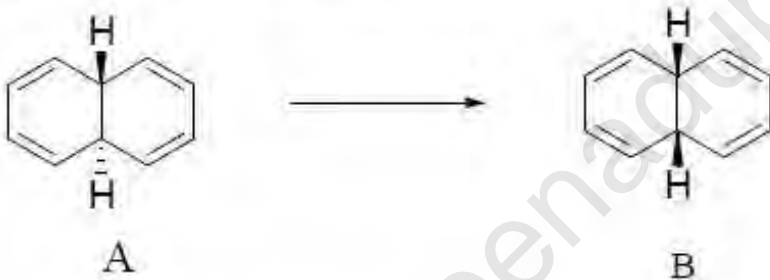
Options :

1. ✓  $h\nu$  ,  $\Delta$
2. ✗  $h\nu$  ,  $h\nu$
3. ✗  $\Delta$  ,  $\Delta$
4. ✗  $\Delta$  ,  $h\nu$

Question Number : 132 Question Id : 79840723568 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది 'A' నుండి 'B' కు మార్పిడిలో రెండు ఎలక్ట్రో సైక్లిక్ చర్యలు ఉన్నాయి



మార్పిడికి అవసరమగు పరిస్థితులు వరుసగా

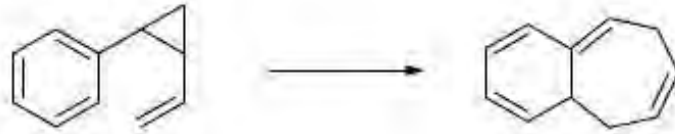
Options :

1. ✓  $h\nu$  ,  $\Delta$
2. ✗  $h\nu$  ,  $h\nu$
3. ✗  $\Delta$  ,  $\Delta$
4. ✗  $\Delta, h\nu$

Question Number : 133 Question Id : 79840723569 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The following pericyclic reaction is



Options :

- Electrocylation
- Cycloaddition reaction
- Sigmatropic rearrangement
- Ene reaction

Question Number : 133 Question Id : 79840723569 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది పెరి సైక్లిక్ చర్య :



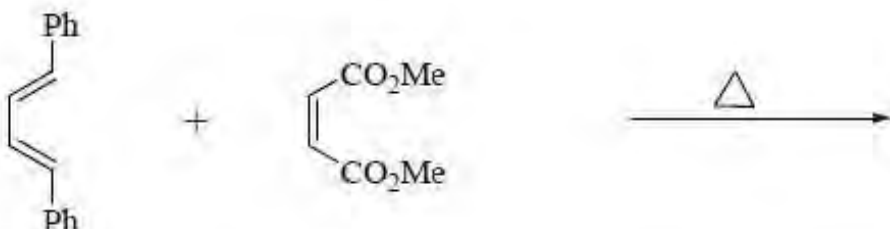
Options :

- విద్యుత్ చక్రికరణం
- వలయసంకలన చర్య
- సిగ్మా ట్రోపిక్ పునరమరిక
- ఈన్ చర్య

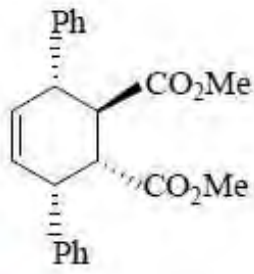
Question Number : 134 Question Id : 79840723570 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

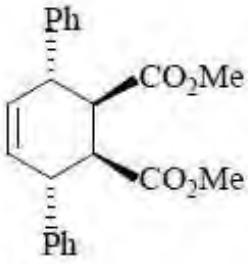
The major product from the following reaction is



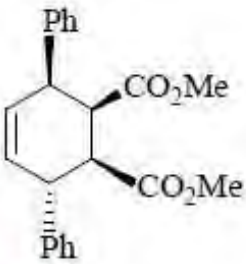
Options :



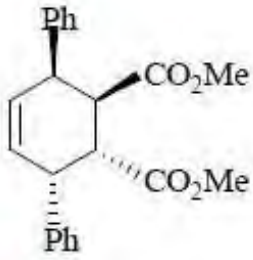
1. ✖



2. ✔



3. ✖

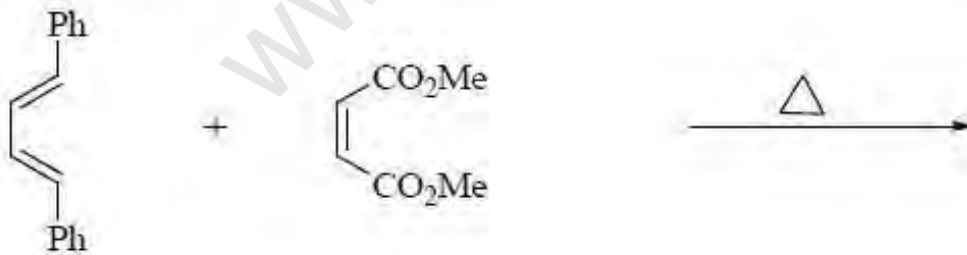


4. ✖

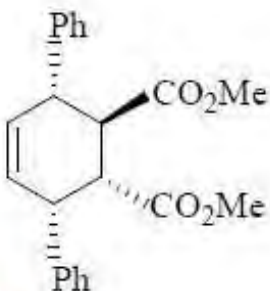
Question Number : 134 Question Id : 79840723570 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

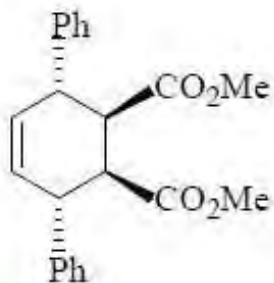
క్రింది చర్యలో పుడాన క్రియాజన్యం



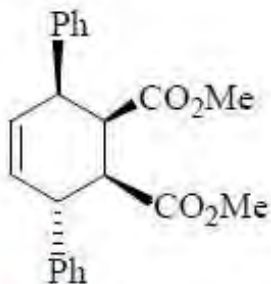
Options :



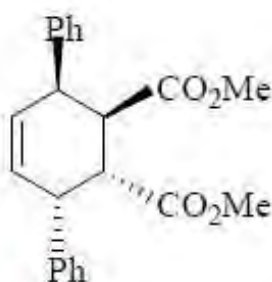
1. ✖



2. ✓



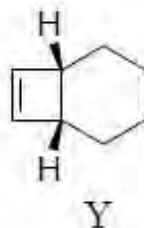
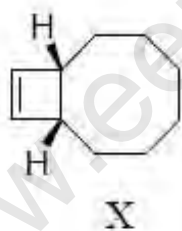
3. ✗



4. ✗

Question Number : 135 Question Id : 79840723571 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

The correct statement regarding 'X' and 'Y' is

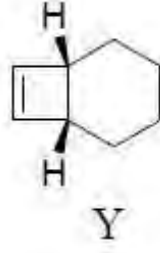
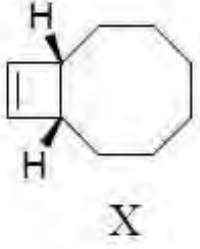


Options :

1. ✗ Both 'X' and 'Y' will undergo thermal electro cyclic ring opening.
2. ✗ Both 'X' and 'Y' will not undergo thermal electro cyclic ring opening.
3. ✗ 'Y' will undergo thermal electro cyclic ring opening but 'X' will not.
4. ✓ 'X' will undergo thermal electro cyclic ring opening but 'Y' will not.

Question Number : 135 Question Id : 79840723571 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

'X' మరియు 'Y' ల గురించి సరియైన వివరణ



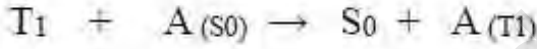
Options :

1. ✖ 'X' మరియు 'Y'లు ధర్మల్ ఎలాక్ట్రోస్టెక్లిక్ వలయ ఓపెనింగ్ లో పాల్గొంటాయి .
2. ✖ 'X' మరియు 'Y'లు ధర్మల్ ఎలాక్ట్రోస్టెక్లిక్ వలయ ఓపెనింగ్ లో పాల్గొనవు.
3. ✖ 'Y' ధర్మల్ ఎలాక్ట్రోస్టెక్లిక్ వలయ ఓపెనింగ్ లో పాల్గొంటుంది కాని 'X' పాల్గొనదు .
4. ✔ 'X' ధర్మల్ ఎలాక్ట్రోస్టెక్లిక్ వలయ ఓపెనింగ్ లో పాల్గొంటుంది కాని 'Y' పాల్గొనదు

Question Number : 136 Question Id : 79840723572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The following photo physical process is known as



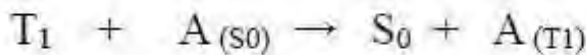
Options :

1. ✖ Fluorescence
2. ✔ Photosensitisation
3. ✖ Internal conversion
4. ✖ Intersystem crossing

Question Number : 136 Question Id : 79840723572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది కాంతి బౌతిక చర్యను ఏమంటారు



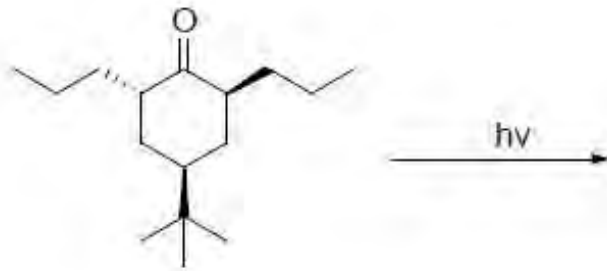
Options :

1. ✖ ప్రతిదీప్తి
2. ✔ కాంతి సూక్ష్మ గ్రాహక చర్య
3. ✖ అంతర్ పరివర్తనము
4. ✖ అంతః వ్యవస్థ వ్యత్యస్తం (Intersystem crossing)

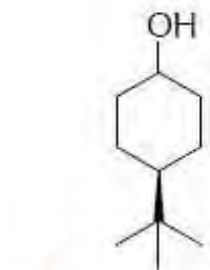
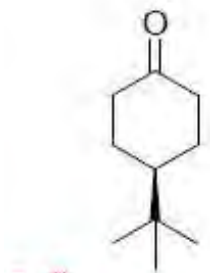
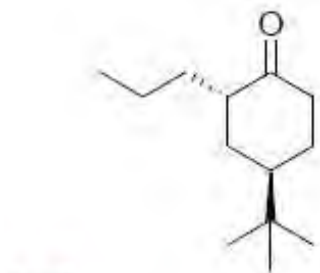
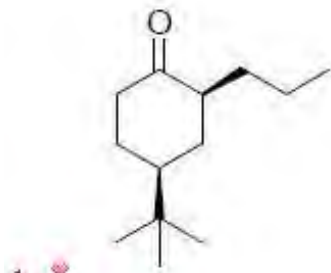
Question Number : 137 Question Id : 79840723573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The major product from the following photochemical reaction is



Options :

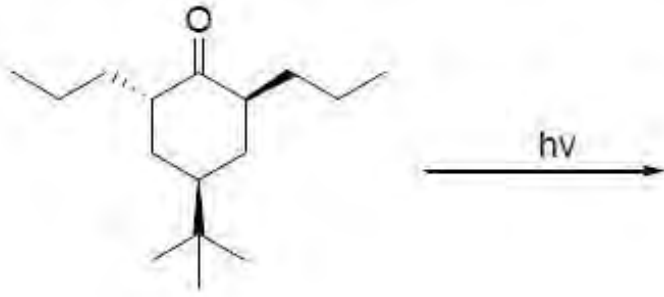


Question Number : 137 Question Id : 79840723573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

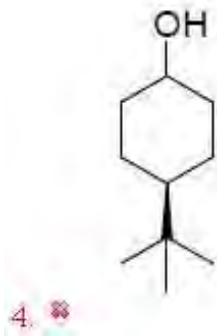
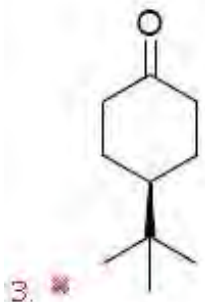
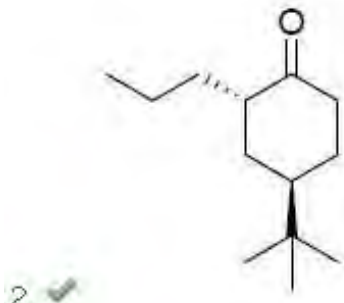
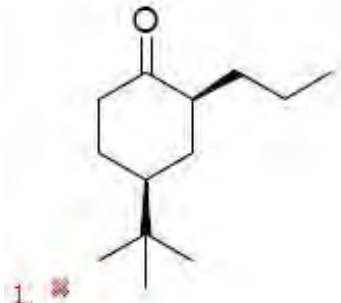
Correct : 2 Wrong : 0.66



క్రింది కాంతి రసాయన చర్యలో ప్రధాన క్రియా జన్యం



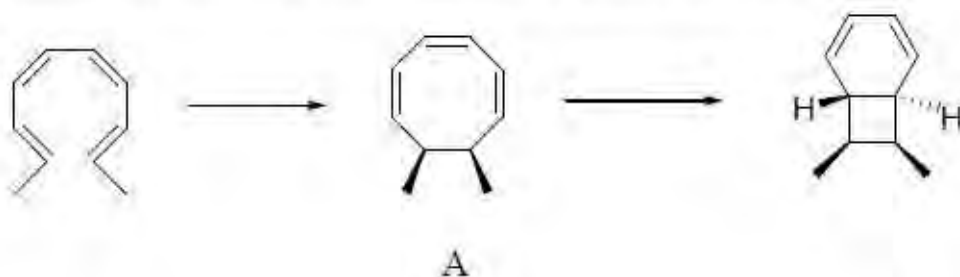
Options :



Question Number : 138 Question Id : 79840723574 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

In the following reaction sequence A and B are formed by two electrocyclic reactions. The stereochemistry of these two reactions respectively are



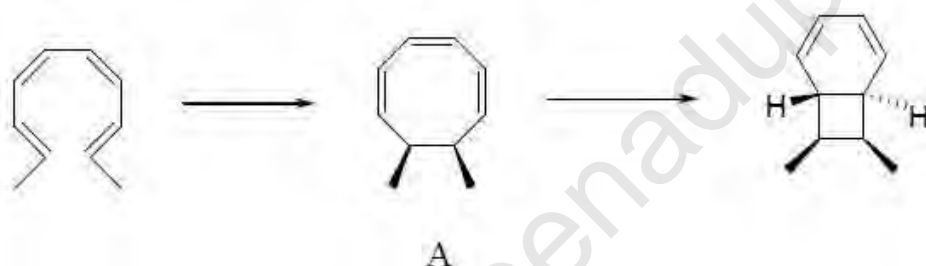
Options :

1.  Disrotation, Con rotation
2.  Disrotation, Disrotation
3.  Con rotation, Con rotation
4.  Con rotation, Disrotation

Question Number : 138 Question Id : 79840723574 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రీంది చర్య క్రమములో రెండు విద్యుత్ చక్రీకరణ (electrocyclic) చర్యల వల్ల A మరియు B ఏర్పడుతాయి. ఆ రెండు చర్యల త్రిమితీయ రసాయన శాస్త్రం వరుసగా



Options :

1.  డిస్ రోటేషన్, కాన్ రోటేషన్
2.  డిస్ రోటేషన్, డిస్ రోటేషన్
3.  కాన్ రోటేషన్, కాన్ రోటేషన్
4.  కాన్ రోటేషన్, డిస్ రోటేషన్

Question Number : 139 Question Id : 79840723575 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify the correct statement(s) from the following.

- a). The  $S_1$  excited states of two conformations of 1,3-butadiene are inter convertible
- b). The direct irradiation of 1,3-butadiene leads to the formation of unimolecular products
- c). The composition of dimers in sensitized reaction of 1,3-butadiene is independent of the  $E_T$  of sensitizer

Options :

- ✘ a, b
- ✘ b & c
- ✔ b
- ✘ a

Question Number : 139 Question Id : 79840723575 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది వాటిలో సరియైన వివరణ లను గుర్తించండి .

- 1,3- బ్యూటాడైయాన్ రెండు అనురూపకాల S1 ఉత్తేజిత స్థితులు అంతర పరివర్తనం చెందుతాయి
- 1,3- బ్యూటాడైయాన్ ప్రత్యక్ష ఉద్యోతనం ఎకాణుక క్రియాజన్యాల ఏర్పాటుకు తోడ్పడుతుంది
- 1,3- బ్యూటాడైయాన్ సూక్ష్మ గ్రాహక చర్యలో ఏర్పడు ద్వితీయకాల సంఘటనము సూక్ష్మ గ్రాహి కారకపు ET మీద ఆధారపడదు

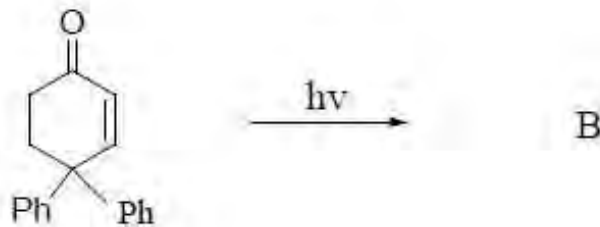
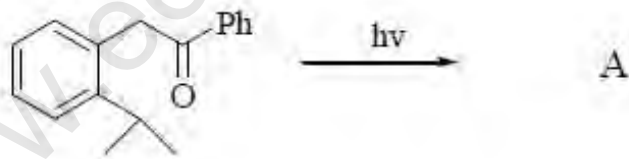
Options :

- ✘ a, b
- ✘ b & c
- ✔ b
- ✘ a

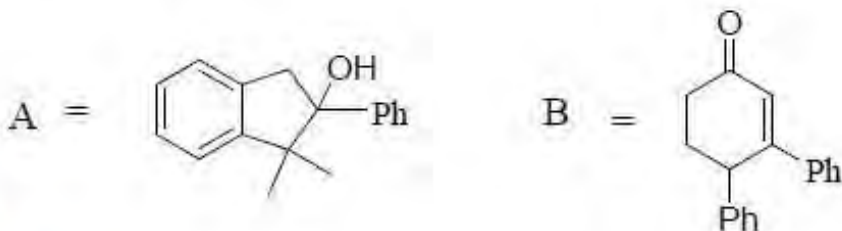
Question Number : 140 Question Id : 79840723576 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Identify 'A' and 'B' in the following reactions

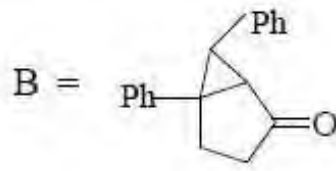
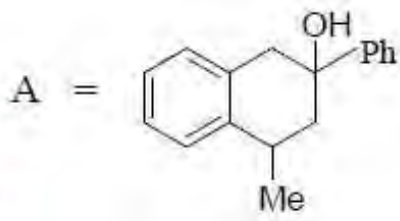


Options :

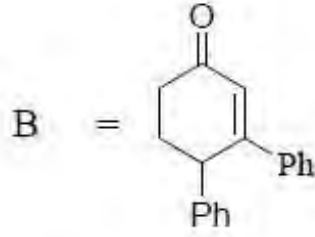
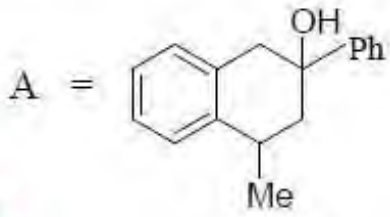


- ✘

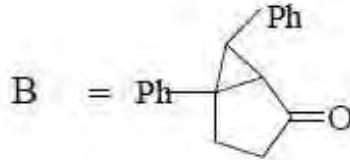
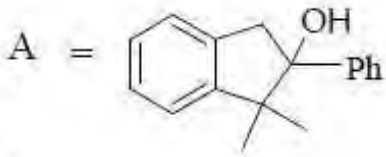
2. ✖



3. ✖

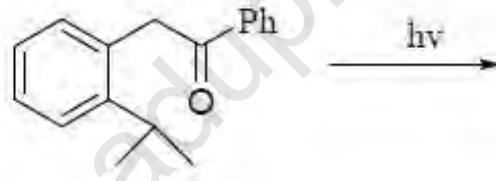


4. ✔

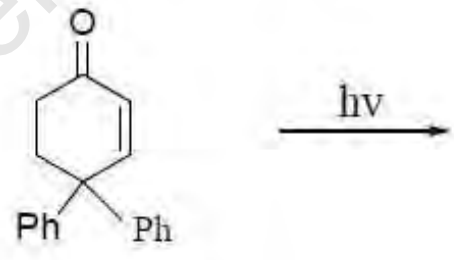


Question Number : 140 Question Id : 79840723576 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
 Single Line Question Option : No Option Orientation : Vertical  
 Correct : 2 Wrong : 0.66

'A' మరియు 'B' లను ఈ క్రింది చర్యలో గుర్తించండి



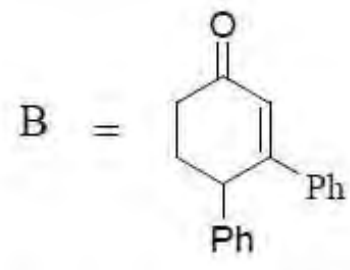
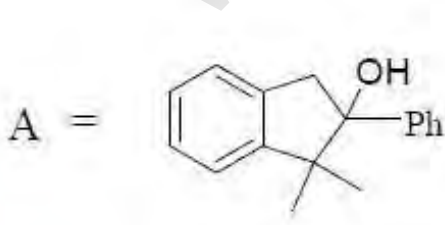
A



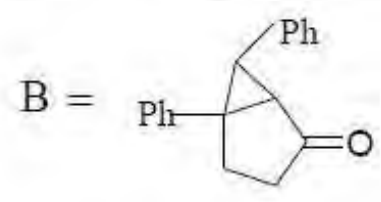
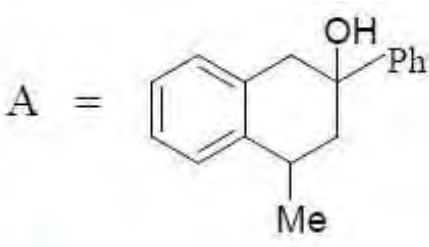
B

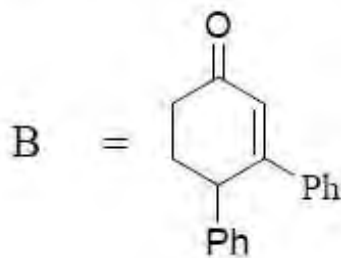
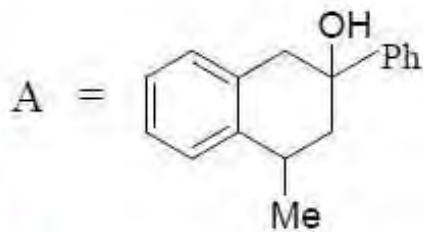
Options :

1. ✖

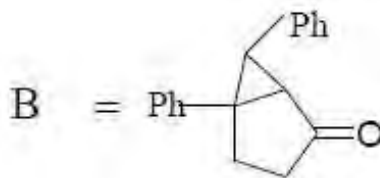
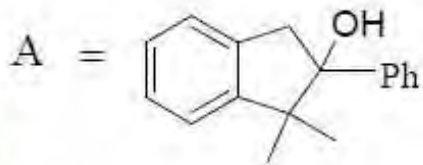


2. ✖





3. ✘



4. ✔

Question Number : 141 Question Id : 79840723577 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

The spin system of aromatic protons in o-dichlorobenzene is

Options :

1. ✘  $A_2X_2$

2. ✘  $A_2B_2$

3. ✔  $AA'XX'$

4. ✘  $A_4$

Question Number : 141 Question Id : 79840723577 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

o-డై క్లోరో బెంజీన్ లోని ఏరోమాటిక్ ప్రోటాన్ల స్పిన్ వ్యవస్థ

Options :

1. ✘  $A_2X_2$

2. ✘  $A_2B_2$

3. ✔  $AA'XX'$

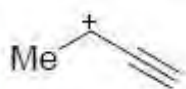
4. ✘  $A_4$

Question Number : 142 Question Id : 79840723578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

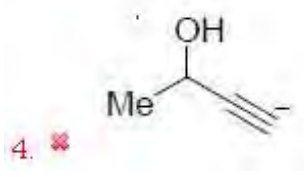
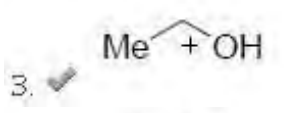
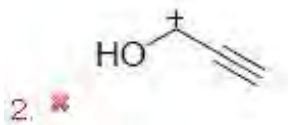
Correct : 2 Wrong : 0.66

The base peak in the mass spectrum of 3-butyne-1-ol is due to which of the following fragments?

Options :



1. ✘

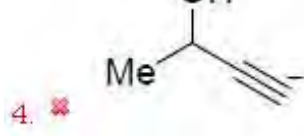
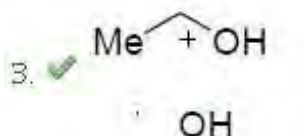
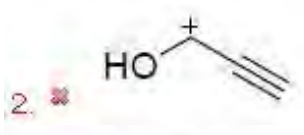
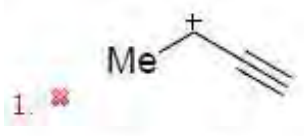


Question Number : 142 Question Id : 79840723578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది ఖండముల (fragments) లో దేని వల్ల 3-బ్యూటైన్ -2-కుల్ ద్రవ్యరాశి వర్ణ పటము (mass spectrum ) లో ఆదార శిఖరం (base peak) ఏర్పడుతుంది?

Options :



Question Number : 143 Question Id : 79840723579 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following organic compounds give IR absorption bands at 1765 and 1215  $\text{cm}^{-1}$  ?

Options :

1. ✔ Phenylacetate

2. ✘ Benzoic acid

3. ✘ Benzoyl chloride

4. ✘ Methyl benzoate

Question Number : 143 Question Id : 79840723579 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింది సెంద్రియ పదార్థాలలో ఏది  $1765$  మరియు  $1215 \text{ cm}^{-1}$  ల వద్ద IR శోషణ పట్టి లనిస్తుంది ?

Options :

- ఫినైల్ ఎసిటేట్ (Phenylacetate)
- బెంజోయిక్ ఆసిడ్ (Benzoic acid)
- బెంజోయిల్ క్లోరైడ్ (Benzoyl chloride)
- మిథైల్ బెంజోయేట్ (Methyl benzoate)

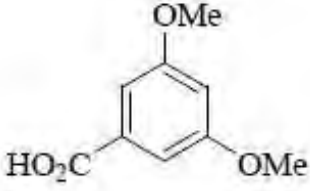
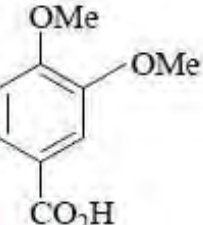
Question Number : 144 Question Id : 79840723580 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Which of the following isomer of dimethoxy benzoic acid displays the signals in

$^1\text{H-NMR}$  at  $\delta$  12.0 ( br.1H), 3.85 (s,6H), 6.63 (t,1H,  $J=2\text{Hz}$ ), 7.17 ( d,2H,  $J=2\text{Hz}$ ).

Options :

- 
- 
- 
- 

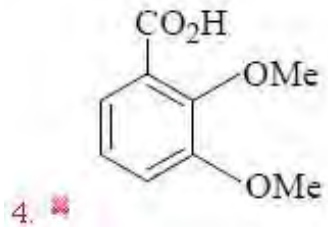
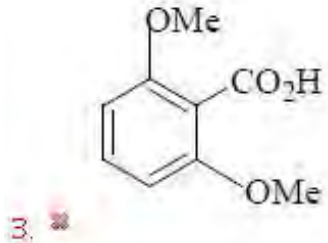
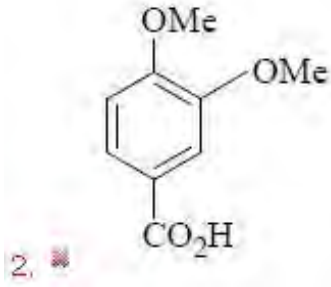
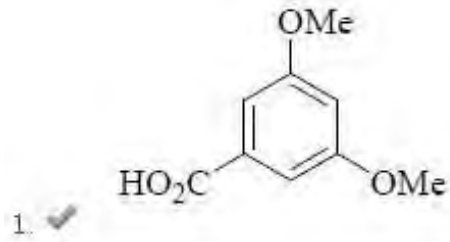
Question Number : 144 Question Id : 79840723580 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

క్రింద ఇవ్వబడిన డై మిథాక్సి బెంజోయిక్ ఆమ్లము సర్దుకాలలో ఏది

$^1\text{H-NMR}$  లో  $\delta$  12.0 (br, 1H), 3.85 (s, 6H), 6.63 (t, 1H,  $J=2\text{Hz}$ ), 7.17 (d, 2H,  $J=2\text{Hz}$ ) వద్ద సిగ్నల్స్ ను ప్రదర్శిస్తుంది.

Options :

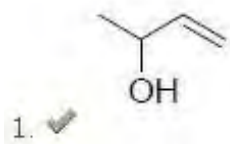


Question Number : 145 Question Id : 79840723581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

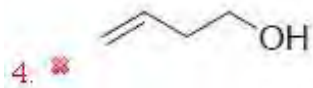
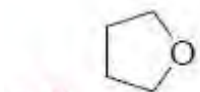
Correct : 2 Wrong : 0.66

An organic compound with the molecular formula  $\text{C}_4\text{H}_8\text{O}$  showed peak in IR spectrum at  $3200\text{ cm}^{-1}$  and in  $^{13}\text{C-NMR}$  at  $\delta$  23, 61.3, 117.2, 134.7. the structure of the compound is

Options :





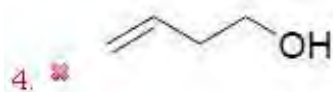
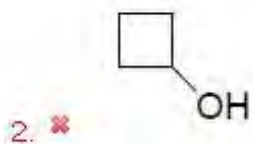
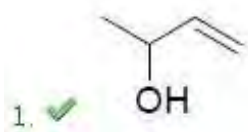


Question Number : 145 Question Id : 79840723581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

అణు సాంకేతికము  $C_4H_8O$  గల ఒక సెంద్రియ పదార్థము IR వర్ణ పటములో  $3200\text{ cm}^{-1}$  వద్ద శిఖరాన్ని మరియు  $^{13}\text{C-NMR}$  లో  $\delta$  23, 61.3, 117.2, 134.7. వద్ద సిగ్నల్ ల ను చూపిస్తుంది. ఆ పదార్థ నిర్మాణం

Options :



Question Number : 146 Question Id : 79840723582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

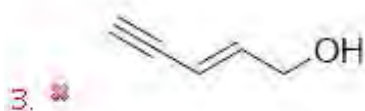
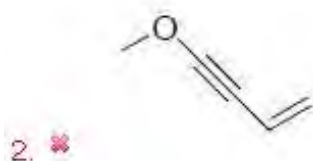
Correct : 2 Wrong : 0.66

Find out the structure of the organic compound with the following spectral data?

Mass:  $m/z = 82 (M^+)$ ; IR :  $3305, 2100$  and  $1630\text{ cm}^{-1}$ ;

$^1\text{H-NMR}$  :  $\delta$  3.7 (s,3H), 3.8 (dd,1H), 4.5 (dd,1H), 6.4(dd,1H).

Options :





4. ✖

Question Number : 146 Question Id : 79840723582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

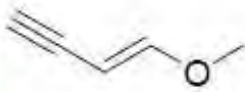
Correct : 2 Wrong : 0.66

క్రింద ఇవ్వబడిన వర్ణపట దత్తాంకములు గల సేంద్రియ - పదార్థం నిర్మాణాన్ని కనుగొనండి. ద్రవ్యరాశి

(mass) :  $m/z = 82 (M^+)$ ; IR : 3305, 2100 మరియు  $1630 \text{ cm}^{-1}$ ;

$^1\text{H-NMR}$  :  $\delta$  3.7 (s,3H), 3.8 (dd,1H), 4.5 (dd,1H), 6.4(dd,1H).

Options :



1. ✔



2. ✖



3. ✖



4. ✖

Question Number : 147 Question Id : 79840723583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Mass spectrum of an organic compound showed  $M^+$ ,  $(M+2)^+$  and  $(M+4)^+$  peaks with % relative abundances 63.42 and 7 respectively. The data indicates the presence of

Options :

1. ✖ Two bromines

2. ✔ Two chlorines

3. ✖ Two sulphurs

4. ✖ One bromine and one chlorine

Question Number : 147 Question Id : 79840723583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఒక సెంద్రియ పదార్థపు ద్రవ్యరాశి వర్ణపటం వరుసగా 63.42 మరియు 7 % సోపేక్ష సమృద్ధి (relative abundances) గల  $M^+$ ,  $(M+2)^+$  మరియు  $(M+4)^+$  శిఖరాలను చూపిస్తుంది. ఈ దత్తంకాలు వేటి ఉనికిని సూచిస్తున్నాయి

Options :

1. ✘ రెండు బ్రోమిన్లు (Two bromines)
2. ✔ రెండు క్లోరిన్లు (Two chlorines)
3. ✘ రెండు సల్ఫర్లు (Two sulphur)
4. ✘ ఒక బ్రోమిన్ , ఒక క్లోరిన్

Question Number : 148 Question Id : 79840723584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

The systematic name of isoquinoline is

Options :

1. ✘ Pyrido[c]benzene
2. ✘ Pyrido[b]benzene
3. ✘ Benzo[b]pyridine
4. ✔ Benzo[c]pyridine

Question Number : 148 Question Id : 79840723584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

ఇసోక్వినోలీన్ క్రమబద్ధ నామము

Options :

1. ✘ పిరిడో [c] బెంజిన్
2. ✘ పిరిడో [b] బెంజిన్
3. ✘ బెంజో [b] పిరిడిన్
4. ✔ బెంజో [c] పిరిడిన్

Question Number : 149 Question Id : 79840723585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical  
Correct : 2 Wrong : 0.66

The most prominent peak in the mass spectrum of methyl salicylate is due to which of the following fragments?

Options :

1. ✘ M-17
2. ✘ M-15
3. ✔ M-32
4. ✘ M-31

Question Number : 149 Question Id : 79840723585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ఈ క్రింద ఇవ్వబడిన ఏ ఖండము వలన మిథైల్ సాలిసిలేట్ యొక్క ద్రవ్యరాశి వర్ణ పటములో ప్రముఖ శిఖరం

విస్తరించుతుంది

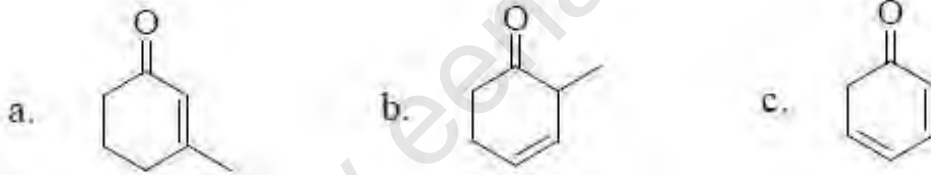
Options :

1. ✘ M-17
2. ✘ M-15
3. ✔ M-32
4. ✘ M-31

Question Number : 150 Question Id : 79840723586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

Arrange the following in the decreasing order of their  $\lambda_{\max}$ .



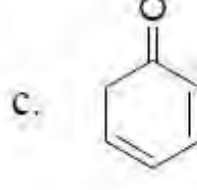
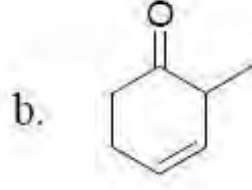
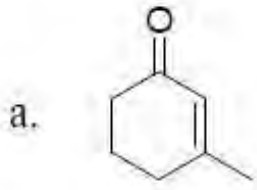
Options :

1. ✔ c > a > b
2. ✘ b > c > a
3. ✘ b > a > c
4. ✘ c > b > a

Question Number : 150 Question Id : 79840723586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes  
Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0.66

ಈ ಕ್ರಿంది ವಾಟಿನಿ ವಾಟಿ  $\lambda_{\text{max}}$ . ತಗ್ಗೆ ಕ್ರಮಮುಲೆ ಅಮರ್ಪಂಡೆ



Options :

1.  c > a > b
2.  b > c > a
3.  b > a > c
4.  c > b > a

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