

Acharya Nagarjuna University

P.G. ENTRANCE TEST, MAY 2012.

Test Name : COMPUTER SCIENCE

HALL TICKET No. :

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Signature of the Candidate

Signature of the Invigilator

INSTRUCTIONS TO CANDIDATES

This question paper booklet consists of THREE Sections A, B and C. Sections A and B contain 30 multiple choice questions each. Section C contain 40 Multiple choice questions.

Clearly write your Hall Ticket Number in the space provided on the question paper booklet (if necessary on the OMR answer sheet) without corrections or overwriting. If any correction is made, get it certified by the invigilator.

You are prohibited from writing your name or Hall Ticket No. on any part of the Question paper booklet or on the OMR answer sheet except in the space provided.

No paper should be detached from the question paper booklet and it should be returned to the invigilator along with the OMR answer sheet.

You are supplied with OMR answer sheet for answering the questions.

Before you start answering, please read the instructions given in the OMR answer sheet.

Do not toil/mutilate/scribble the OMR answer sheet.

For answering the questions darken the appropriate circle completely with HB pencil only.

If you wish to change your answer, erase already darkened circle and then darken the appropriate circle.

Do not make any stray marks/scribble on the bar code of the OMR answer sheet.

Any rough work should be done in the space provided at the end of the question paper booklet.

Test Name : COMPUTER SCIENCE

Time : 90 minutes

Maximum : 100 marks

Answer ALL questions.

Each question carries 1 mark.

SECTION A

1. The process of accessing information on a CD-ROM is
 - (a) Random
 - (b) Semi-random
 - (c) Sequential
 - (d) None of the above

2. A 4-bit ring counter is initially loaded with
 - (a) 000
 - (b) 0001
 - (c) 1000
 - (d) 1111

3. CACHE memory is implemented using
 - (a) EPROM
 - (b) Static RAM
 - (c) Dynamic RAM
 - (d) EAROM

4. A programme embedded in semi-conductor chips during their manufacture is known as
 - (a) Firm ware
 - (b) Human ware
 - (c) Hard ware
 - (d) Soft ware

5. An array processor consists of
 - (a) Multiple control unit and multiple ALU units
 - (b) Multiple control units and single ALU unit
 - (c) Single control unit and multiple ALU units
 - (d) Single control unit and single ALU unit

6. How many binary numbers are created with 8 bits?
 - (a) 256
 - (b) 128
 - (c) 64
 - (d) 16

7. Which number system is not a positional notation system?
(a) Binary (b) Decimal
(c) Hexadecimal (d) ROMAN
8. A Global variable is also known as _____ variable.
(a) Auto (b) Register
(c) Extern (d) Static
9. The first element in a string is
(a) The name of the string (b) The length of the string
(c) The first character in the string (d) None of the above
10. A pointer is
(a) Name of the variable
(b) An indication of the variable to be accessed next
(c) A variable for storing address
(d) None of the above

11. The output of the following programme is

```
main ()  
{  
    int i = 5 ; j = 5  
    while (j --> = 3)  
    {  
        static int i = 10  
    }  
    printf ("%d", i);  
}
```

- (a) 5, 6, 7, 8 (b) 10, 11, 12, 13
(c) 5, 10, 15, 20 (d) none of the above

12. The while statement is a _____ loop statement.
- (a) Entry controlled (b) Exit controlled
(c) Un-conditional (d) None of the above
13. The for statement is a _____ loop statement.
- (a) Entry controlled (b) Exit controlled
(c) Un-conditional (d) None of the above
14. If P is a pointer and X is an array, the statement $P = X$ is equivalent to
- (a) $P = *X$ (b) $P = \&X[0]$
(c) $\&P = X$ (d) Invalid
15. The statement `static char string [] = {'g', 'o', 'o', 'd', '\0'}` define an array string of length
- (a) 4 (b) 5
(c) 6 (d) Error
16. The switch statement is
- (a) looping statement (b) control statement
(c) decision making statement (d) either (b) or (c)
17. The goto is a _____ statement.
- (a) Decision making (b) Conditional
(c) Unconditional (d) None of the above
18. The C library function that generates random numbers is
- (a) rno (b) rand
(c) randno (d) randnum

19. Data item characteristics which are important in data management include the
- (a) punctuation
 - (b) spelling
 - (c) language
 - (d) width
20. Large collection of files is known as
- (a) Fields
 - (b) Records
 - (c) Sectors
 - (d) Database
21. The ascending order of hierarchy is
- (a) bit – byte – field – record – file – database
 - (b) database – file – record – field – byte – bit
 - (c) byte – bit – record – field – file – database
 - (d) bit – byte – record – field – database – file
22. A file contains several records where as a record contains several _____.
- (a) Programs
 - (b) Bytes
 - (c) Bits
 - (d) Fields
23. A computer file can be considered as
- (a) an orderly collection of data items
 - (b) a string of data items
 - (c) a collection of data items
 - (d) a random collection of data items
24. A file in C++ consists of _____ and _____.
- (a) Fields, Sorts
 - (b) Fields, Records
 - (c) Records, Sorts
 - (d) Database, Fields

25. Address are considered as
- (a) Numeric fields
 - (b) Data fields
 - (c) Alpha fields
 - (d) Relational fields
26. Telephone numbers are considered as
- (a) Numeric fields
 - (b) Data fields
 - (c) Alpha fields
 - (d) Relational fields
27. One mega byte is
- (a) 2^{23} bits
 - (b) 2^{23} bytes
 - (c) 2^{22} bits
 - (d) 2^{23} bytes
28. The maximum number of nodes in a binary tree of length K is
- (a) 2^{K-1}
 - (b) $(K + 1)$
 - (c) 2^K
 - (d) $2^K - 1$
29. ASCII is an acronym for
- (a) American Standard Code for International Information
 - (b) American Standard Code for Information Interchange
 - (c) American Standard Code for Information Integrated
 - (d) American Standard Connection Code of Interchange of Information
30. C++ is
- (a) An operating system
 - (b) A command
 - (c) A part in CPU
 - (d) An object oriented programming language

SECTION B

31. Double click is normally used for
- (a) Closing a file (b) Opening a file
(c) Deleting a file (d) Copying a file
32. Which of the following is not a bitwise operator?
- (a) ~ (b) ^
(c) && (d) <<
33. Which of the following is a right shift operator?
- (a) >> (b) &
(c) << (d) ^
34. Operating system is
- (a) Read only memory (b) An application software
(c) System software (d) Random Access Memory
35. Which one of the following is a software?
- (a) monitor (b) mouse
(c) word (d) memory
36. C is a
- (a) Hardware (b) Structured language
(c) Monitor (d) A part of the CPU
37. Program Status Word (PSW) contains different status of
- (a) CPU (b) ALU
(c) Program (d) Register
38. Micro programming is a designing of
- (a) ALU (b) CPU
(c) ROM (d) Control Unit

39. Menu Bar in word (WORD) has
- (a) Pictures
 - (b) Colour Bars
 - (c) Menu Items
 - (d) Bar charts
40. Computer VIRUS is spread through
- (a) Memory unit
 - (b) The monitor
 - (c) Files
 - (d) The Internet
41. Prolog is a
- (a) Programming Language
 - (b) Command
 - (c) Operating System
 - (d) Statement
42. Excel is a
- (a) Hardware
 - (b) Software Package
 - (c) Memory
 - (d) A computer component
43. A programme means
- (a) Monitor
 - (b) Hard Disk
 - (c) Hardware
 - (d) A sequence of Instructions
44. The default return data type in functions definition is
- (a) void
 - (b) int
 - (c) float
 - (d) char
45. A structure is a _____.
- (a) Derived Data Type
 - (b) Scalar Data Type
 - (c) Primitive Data Type
 - (d) Function
46. The main purpose of an operating system is
- (a) To make efficient use of the hardware
 - (b) To allow people to use the computer
 - (c) To make computers easier to use
 - (d) To keep system programmers employed

47. The key word used to represent a structure data type is
- (a) structure
 - (b) struct
 - (c) struc
 - (d) str
48. Union is a
- (a) A Pointer Data Type
 - (b) A Special Type of Structure
 - (c) A Function Data type
 - (d) A String Data Type
49. The most widely used method for interpreting bit setting as non-negative integer is
- (a) Binary number system
 - (b) BCD system
 - (c) ASCII system
 - (d) Digital number system
50. Structured Data Type made up of finite collection of ordered elements, all of which are of the same data types is known as
- (a) A Record
 - (b) An Array
 - (c) A file
 - (d) A numeric
51. Using 2's complement method, the range of numbers that can be represented using n bits is
- (a) -2^{n-1} to 2^{n-1}
 - (b) A1 followed by n ones to a1 followed by n zeros
 - (c) A1 followed by $n - 1$ zeros to a 0 followed by $(n - 1)$ 1's
 - (d) -2^n to $+2^n$
52. A function prototype indicates
- (a) The number of variables
 - (b) The arguments passed to the function
 - (c) The type of the value returned by the function
 - (d) The arguments passed and the type of value returned by the function

53. The following device is considered as both Input and Output device
- (a) Mouse (b) Printer
(c) Keyboard (d) Monitor
54. Which of the following is a service but not supported by the operating system
- (a) I/O operation (b) Compilation
(c) Accounting (d) Protection
55. Semaphores are used to
- (a) Synchronize critical resources to prevent contention
(b) DO I/O operations
(c) Synchronize critical resources to prevent dead lock
(d) Memory management
56. The keyword of enumeration data type is
- (a) e-num (b) enum
(c) E-num (d) enume
57. Bitwise operators may not be applied to
- (a) Double (b) Int
(c) Float (d) Double or Float
58. The default parameter passing mechanism is
- (a) Call by value (b) Call by value result
(c) Call by reference (d) Call by reference result
59. Unix is originally designed as
- (a) As multi-user OS (b) With command line interface
(c) Multi threaded OS (d) All the above
60. A micro processor, is a processor with a reduced
- (a) Instruction set (b) Power requirement
(c) MIPS performance (d) None of the above

SECTION C

61. A stack consists of
- (a) Register (b) RAM
(c) ROM (d) CPU
62. The stack pointer on the 8085 micro-processor is a
- (a) 16 bit register that point to stack memory location
(b) 16 bit accumulator
(c) memory location in the stack
(d) a flag register
63. In SQL which command is used to get output from the user
- (a) Read (b) CIN
(c) Accept (d) Write
64. The operation of processing each element in the list is known as
- (a) sorting (b) merging
(c) inserting (d) traversal
65. The part of Data Manipulation Language (DML) that involves information retrieval is called as
- (a) meta language (b) report generation
(c) query language (d) data definition language
66. Data about data is normally termed as
- (a) Data base (b) Meta data
(c) Stack data (d) DOD

67. Every Boyce-Codd Normal Form (BCNF) is in
- (a) First Normal Form (1NF)
 - (b) Second Normal Form (2NF)
 - (c) Third Normal Form (3NF)
 - (d) Fourth Normal Form (4NF)
68. Functional dependencies are a generalization of
- (a) Key dependencies
 - (b) Relation dependencies
 - (c) Database dependencies
 - (d) Field dependencies
69. Quel is a query language for the following database
- (a) DBASE IV
 - (b) DB II
 - (c) ORACLE
 - (d) INGRESS
70. The translation of a query into its internal form is usually done using the following
- (a) the structure of database
 - (b) relation algebra
 - (c) query processing
 - (d) database scheme
71. The redundant storage of search key values in B^+ trees are eliminated in _____ trees
- (a) Indexed sequential file
 - (b) B^+
 - (c) Binary
 - (d) AVL
72. Which language is used by most of DBMS for helping their users to access the data?
- (a) Query language
 - (b) 4GL
 - (c) SQL
 - (d) HLL

73. Database management system may be implemented of
- (a) Application software (b) Computer programme
(c) System Software (d) All the above
74. File record length should always be
- (a) a variable
(b) fixed
(c) depending upon the size of the file
(d) chosen to match the data character
75. E-R modelling technique is a _____ approach.
- (a) Bottom-up (b) Top-down
(c) Left-right (d) Right-left
76. Graphics objects can be stored in the _____ type of fields
- (a) Random (b) General
(c) Normal (d) Random or General
77. Which of the following name does not related to slacks?
- (a) Push-down (b) Piles
(c) FIFO (d) LIFO
78. Which is better computing time in the analysis of algorithm?
- (a) $O(n)$ (b) $O(2^N)$
(c) $O(\log_2 N)$ (d) $O(N^2)$

79. The order of magnitude of the worst case performance of ordered binary tree with N element is
- (a) $N \log_2 N$ (b) $\log_2 N$
(c) N^2 (d) N
80. DDL expansion is
- (a) Data Definition Language (b) Design Data Language
(c) DOS Definition Language (d) Data Design Language
81. A B-tree of order n is also called as _____ tree.
- (a) $(n - n) - 1$ (b) $n - (n - 2)$
(c) $(n - 1) - n$ (d) $2n(n - 1)$
82. E-R stands for
- (a) Entity Rate (b) Entity Relation model
(c) Erlong-Relation model (d) Error-Rate
83. A full binary tree with n non-leaf nodes contains _____ nodes.
- (a) 2^n (b) $\log_2 n$
(c) $2n + 1$ (d) $n + 1$
84. BCNF stands for
- (a) Basic-Combined Normal Form
(b) Boyce-Code Normal Form
(c) Base-Code Normal Form
(d) Basic-Code Normal Function

85. Pre order is nothing but
- (a) Depth First Order
 - (b) Topological Order
 - (c) Linear order
 - (d) Breadth First Order
86. XML means
- (a) Exchanged Making Language
 - (b) Extended Markup Language
 - (c) Extensible Making Language
 - (d) Extensible Markup Language
87. Normalization implies
- (a) Eliminates anomalies to reduce maintenance
 - (b) Increasing flexibility and stability
 - (c) Avoid duplication
 - (d) All the above
88. A table that is in 2NF and contains no transitive dependencies is said to be in
- (a) 1NF
 - (b) 2NF
 - (c) 3NF
 - (d) 4NF
89. The maximum number of nodes in a binary tree of height 5 are
- (a) 31
 - (b) 32
 - (c) 16
 - (d) 15

90. The entity integrity rule states that
- (a) No primary key can be composite
 - (b) No primary key attribute may be null
 - (c) No primary key may be unique
 - (d) No primary key may be equal to a value in a foreign key
91. The DOS command which is used to prepare a duplicate disk is
- (a) diskcopy
 - (b) diskcomp.
 - (c) diskdraft
 - (d) copy
92. A personal computer belongs to the class of _____ computers
- (a) mainframe
 - (b) micro
 - (c) mini
 - (d) super
93. Merge sort uses
- (a) Backtracking approach
 - (b) Inivide and conquer strategy
 - (c) Greedy approach
 - (d) Heuristic search
94. Which view shows slide presentation in full screen?
- (a) Normal
 - (b) Outline
 - (c) Slide sorter
 - (d) Slide show
95. Proto types are
- (a) Function declaration
 - (b) Function definition
 - (c) Library files
 - (d) Header files

96. Which of the following is a serious problem of file management systems?
- (a) Difficult to update
 - (b) Data redundancy
 - (c) Lack of data independence
 - (d) Operating dependence
97. A linear list in which elements can be added or removed at either end but not on the middle is known as
- (a) Tree
 - (b) Stack
 - (c) Deque
 - (d) Queue
98. Which of the following sorting algorithm does not have or worst case running time of $O(n^2)$
- (a) Quick sort
 - (b) Bubble sort
 - (c) Merge sort
 - (d) Insertion sort
99. In what order the elements of a push-down stack are accessed?
- (a) First In First Out (FIFO)
 - (b) Last In First Out (LIFO)
 - (c) Last In Last Out (LILO)
 - (d) Random access
100. The minimum number of temporary variables needed to swap the content of two variables is
- (a) 0
 - (b) 1
 - (c) 2
 - (d) 3