**Ph.D. COMMON ENTRANCE TEST**

**SUBJECT – COMPUTER SCIENCE & INFORMATION TECHNOLOGY**

**Roll No:**

**PART B**

**Duration: 60 minutes Maximum Marks: 50**

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| **Instructions:**1. **This entrance test question paper is not to be taken out of the examination hall**
2. **Question paper consists of Section A and Section B**
3. **Section A consists of 30 MCQs carrying 1 Mark each. Write the Alphabet of the correct answer in the space given.**
4. **Section B consists of Descriptive questions carrying 5 marks each. Restrict your answer to 500 words. Additional plain sheets have been attached to the question paper to answer Section B**
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**SECTION – A**

**Answer the following questions by writing the Alphabet of the correct answer in the Box given: 30 X 1 = 30**

1. A list of n strings, each of length n, is sorted into lexicographic order using the merge-sort algorithm. The worst case running time of this computation is.
2. O (n log n)
3. O (n2 log n)
4. O (n2 + log n)
5. O (n2)
6. The time factor when determining the efficiency of algorithm is measured by.
7. Counting microseconds
8. Counting the number of key operations
9. Counting the number of statements
10. Counting the kilobytes of algorithm
11. which one of the following is a correct option that provides an optimal solution for 4-queens problem?
12. (3,1,4,2)
13. (4,3,2,1)
14. (4,2,3,1)
15. (2,3,1,4)
16. What are the canonical forms of Boolean Expressions?
17. OR and XOR
18. OR and NAND
19. MAX and MIN
20. SOM and POM
21. The video devices are connected to \_\_\_\_\_\_ BUS.
22. PCI
23. USB
24. HDMI
25. SCSI
26. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used for creating and destroying table, indexes and other forms of structures.
27. Data Definition Langauge
28. Data manipulation Language
29. Data Control Language
30. Transaction Control languages
31. When the values in one or more attributes being used as a foreign key must exist in another set of one or more attributes in another table, we have created a ------------
32. insertion anomaly
33. Normal form
34. Referential integrity constraint
35. Transitive dependency
36. A table can have only one \_\_\_\_\_\_\_\_\_\_\_\_.
37. Secondary key
38. Alternate key
39. Primary Key
40. Unique Key
41. SQL is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
42. Simple Query Langauge
43. Structured Query List
44. Structured Query Language
45. Simple Query List

1. A functional dependency is a relationship between or among \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Tables
3. Rows
4. Attributes
5. Relations
6. If A = {1, 2, 3, 4, 5, 6} and B = {3, 6, 9} then A ∩ B is \_\_\_\_\_\_\_.
7. {1,4}
8. {3, 6}
9. {3,4}
10. {2,6}
11. 0! = ?
12. 0
13. 1
14. 10
15. Not Defined
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allocates memory for each element separately and only when necessary.
17. enumerator
18. Union
19. Array
20. linked list
21. Find the correct postfix expression for A\*B/(C-D).
22. ABCD\*-/
23. AB\*CD-/
24. A\*BCD-/
25. AB-CD\*/
26. In tree data structure, the nodes that have the same parent are known as \_\_\_\_\_\_\_\_\_.
27. Leaf
28. Siblings
29. Ancestor
30. Root
31. The state of a process is defined by :.
32. The final activity of the process
33. The current activity of the process
34. The activity just executed by the process
35. The activity to next be executed by the process
36. Virtual memory is normally implemented by \_\_\_\_\_\_\_.
37. demand paging
38. Buses
39. RAM
40. All of the above
41. A grammar that produces more than one parse tree for some sentence is called.
42. Ambiguous
43. Unambiguous
44. Regular
45. None of these
46. What is SDLC stands for.
47. Software Development Life Cycle
48. System Design Life Cycle
49. System Development Life Cycle
50. Software Design Life Cyle
51. RAD stands for.
52. Relative Application Development
53. Rapid Application Document
54. Rapid Application Development
55. Radix Application Development
56. In the OSI model, as a data packet moves from the lower to the upper layers, headers are \_\_\_\_\_\_\_.
57. Added
58. Removed
59. Rearranged
60. Modified
61. IPv6 has \_\_\_\_\_\_\_ bit address.
62. 32
63. 64
64. 128
65. 256
66. Which error detection method uses one's complement arithmetic?
67. Simple parity check
68. Two-dimensional parity check
69. Checksum
70. CRC
71. One security protocol for the e-mail system is \_\_\_\_\_\_\_\_\_.
72. IPSec
73. SSL
74. PGP
75. All of the above
76. The physical layer is concerned with the movement of \_\_\_\_\_\_\_ over the physical medium.
77. Programs
78. Dialogs
79. Protocols
80. Bits
81. (3^5)/(3^3) = ?
82. 1
83. 3
84. 9
85. 27
86. What is the abbreviation for CRC in link layer frame?
87. Carrier redundance check
88. Cyclic redundancy check
89. checking redundancy in carrier
90. None of the above

28. What does the study of an existing system refer to?

1. Details of DFD
2. Feasibility Study
3. System Analysis
4. System Planning

29. What does the study of an existing system refer to?

1. Encryption of data
2. To transmit faster
3. To detect errors
4. To identify user

30. A collection of hyperlinked documents on the internet forms the ---------?

1. World Wide Web ( WWW)
2. E-mail System
3. Mailing List
4. Hypertext markup language

**Section - B**

**Answer any four questions (Each question carry 5 marks) 4\*5 = 20**

1. Explain the spiral model with neat diagram.
2. Explain the TCP/IP architecture with two functions of each layer.
3. What are the service models in cloud computing? Discuss it.
4. Write short notes on supervised and deep machine learning.
5. Explain the operations of stack with neat sketch.
6. Explain any two agile methods.

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