BHU PHD RET - CS

00072

Set No. : 1

**RET/18/TEST-A**

Question Booklet No.

| 886 | Computer Science |
|---|---|

*(To be filled up by the candidate by blue/black ball point pen)*

Roll No. | 8 | 8 | 6 | 1 | 1 | 0 | 0 | 0 | 3 | 2 |

Roll No. (Write the digits in words) Eight Eight Six One One zero Zero Zero three two

Serial No. of OMR Answer Sheet T59030

Centre Code No. | 1 | 1 | 0 | 7 |

Day and Date 6 OCT 2018 (SATURDAY)

Sanjay

( Signature of Invigilator )

## *INSTRUCTIONS TO CANDIDATES*

***(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)***

1. Within 30 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, Bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall ***except the Admit Card without its envelope.***
3. ***A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.***
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. ***On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number, Centre Code and the Set Number in appropriate places.***
6. ***No overwriting is allowed in the entries of Roll No., Question Booklet No., Centre Code and Set No. (if any) on OMR Answer sheet and Roll No. and OMR Answer sheet no. on the Question Booklet.***
7. ***Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.***
8. ***This Question Booklet contains 100 multiple choice questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.***
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. ***Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).***
11. For rough work, use the inner back pages of the title cover and the blank page at the end of this Booklet.
12. ***Deposit both OMR Answer Sheet and Question Booklet at the end of the Test.***
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

**Total No. of Printed Pages : 28**

# 886/Computer Science

## Research Entrance Test-2018

### No. of Questions : 100

*Time : 2 Hours* *Full Marks : 300*

**Note: (1)** This Question Booklet contains **100** MCQs. First **40** MCQs are based on components of Research Methodology followed by **60** MCQs based on subject and area concerned.

**(2)** Attempt as many MCQs as you can. Each MCQ carries **3 (Three)** marks. **1 (One)** mark will be deducted for each incorrect answer. **Zero** mark will be awarded for each unattempted question.

**(3)** If more than one alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.

**01.** The variance is :

(1) Difference between the highest and lowest

(2) Squared deviation from the mean

(3) Standard Deviation

(4) Average value of the distribution

02. Academic research is different than general market research :

(1) In methodology

(2) In the overall dedication of the researchers

(3) In the relationship between Supervisor and Research Scholar

(4) In the working of the researchers

03. One which is used for statistcal computing :

(1) R (2) MS-Word

(3) Postgres (4) MS-Powerpoint

04. A free service to search the scholarly literature :

(1) Scopus (2) Web of Science

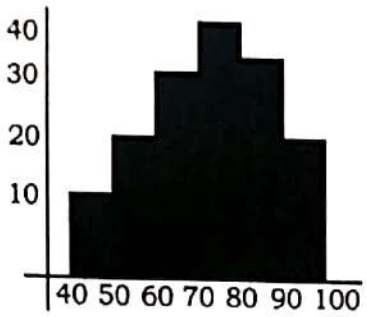
(3) Google Scholar (4) JSTOR

05. The other name of Random sampling is :

(1) Random error (2) Sampling error

(3) Non-probability sampling (4) Probability sampling

**06.** The given graph is an example of :




(1) Histograrm (2) Pie Chart

(3) Line Chart (4) Bar Chart

**07.** The photocopying facility in library is called :

(1) Circulation Service (2) Reprography Service

(3) Referral Service (4) Reference Service

**08.** The depth of any research can be judged by :

(1) Objectives of the research

(2) Duration of the research

(3) Title of the research

(4) Total expenditure on the research

**09.** What is a research design ?

(1) A way of conducting research that is not grounded in theory

(2) The choice between using qualitative or quantitative methods

(3) The style in which you present your research findings, e.g. a graph

(4) A framework for every stage of the collection and analysis of data

10. Which of the following is **not** a type of sampling used in structured observation ?

(1) Focal sampling
(2) Scan sampling
(3) Emotional sampling
(4) Behaviour sampling

11. What is the purpose of the conclusion in research report ?

(1) It explains how concepts were operationally defined and measured
(2) It contains a useful review of the relevant literature
(3) It outlines the methodological procedures that were employed
(4) It summarizes the key findings in relation to the research questions

12. According to the Harvard referencing convention, which is the correct reference ?

(1) Bryaman, A. (2012,4e ) Social Research Methods, Oxford; Oxford University Press
(2) Bryman (2012, fourth edition), Oxford University Press
(3) Bryman, Alan, Social Research Methods (2012:OUP)
(4) Bryman, A. Social Research Methods (2012)

13. One of the critcisms often levelled at structured observation is that :

(1) It does not allow us to impose any framework on the social setting
(2) It only generates a small amount of data
(3) It is unethical to observe people without an observation schedule
(4) It does not allow us to understand the intentions behind behaviour

14. The data from each row in a coding schedule can be entered into a quantitative analysis computer program is called :
(1) Endnote (2) N-VIVo
(3) Outlook (4) SPSS

15. How might quantitative research facilitate qualitative research ?
(1) By identifying specific group of people to be interviewed
(2) By showing the frequency of different responses to a survey item
(3) By imposing a rigorous positivist framework on it
(4) By combining labortory experiments with structured observation

16. Which of the following is **not** a feature of multi- strategy research ?
(1) It is inherently superior to mono-strategy research
(2) It must be competently designed and conducted
(3) It must be appropriate to the research questions
(4) The skill of all research must be well integrated

17. Op. cit. is meant for :
(1) Open Certificate
(2) Opera Citato 'in the work cited'
(3) Opposite Citations
(4) Open source in websites

18. Cohort studies can be :
(1) Prospective
(2) Retrospective
(3) Both, Prospective & Retrospective
(4) Perspective

19. ISSN stands for :
(1) International Serial Standard Number
(2) International Sequential Special Number
(3) International Standard Serial Number
(4) International Standard Sequence Number

20. Blue print of Research work is called :
(1) Research Problem (2) Research design
(3) Research tools (4) Research methods

21. ..... prevent a reseacher from blind intellectual wandering :
(1) Data (2) Sample
(3) Research tool (4) Research design

22. Motivational Research is a type of ..... research :
(1) Quantitative (2) Qualitative
(3) Pure (4) Applied

23. Research related to abstract ideas is :
(1) Empirical research (2) Conceptual Research
(3) Quantitative research (4) Qualitative research

24. ..... is the first step of Research process :
(1) Formulation of a problem (2) Collection of Data
(3) Editing and Coding (4) Selection of a problem

25. Which of the following is non-probability sampling method. :
(1) Simple random sampling (2) Cluster sampling
(3) Systematic sampling (4) Quota sampling

26. Design of experiment means :
(1) How to perform experiment in a reliable, valid, economic and efficient ways
(2) How to perform experiment in less cost.
(3) How to perform experiment in an efficient ways.
(4) How to perform experiment with better selection of sample sizs.

27. Which of the following is required for a researcher :
(1) Scientific thinking (2) Scientific attitude
(3) Scientific feeling (4) Scientific behaviour

28. Longitudinal approach of research deals with :
(1) Short term research (2) Long term research
(3) Horizontal research (4) Cross sectional research

29. In a heterogeneous population the most suitable method of sampling is :
(1) cluster sampling
(2) stratified random sampling
(3) Convenient sampling
(4) Quota Sampling

30. Standard Error is nothing but :
(1) Standard deviation of population distribution
(2) Dispersion Error
(3) Standard deviation of sampling distribution
(4) Conceptual Error

31. Good research questions are :
(1) Clear, significant and ethical
(2) Feasible, clear, significant and ethical
(3) Feasible, clear, significant and include a hypothesis
(4) Feasible , clear and ethical

32. A representative sample is essential to :
(1) Survey method
(2) Experimental method
(3) Case study
(4) Clinical study

33. What is the cross sectional study :
(1) A study of one specified segment of constraints
(2) The research design which is free from personal bias
(3) The collection of data from several group at the same time
(4) The data collected at respacted point of time

34. A research design is :
(1) A common method adopted by all researchers
(2) A final choice between questionair and data analysis
(3) Analysis quantitative method of presentation of research study
(4) A framework for every stage of data collection and its analysis

35. Which method is used for the evaluation of research Aim ?
(1) Situation based decision making
(2) Profile based decision making
(3) Data-based decision making
(4) Trend based decision making

36. In purposive sampling the units are selected with :

(1) Law of probability

(2) Personal Judgement

(3) Law of certainity

(4) Equal probability

37. A researcher wants to answer to a research question pertaining to a :

(1) Target population (2) Sample

(3) Accessible Population (4) World

38. Inference drawn about the population on the basic of small sample is called :

(1) Deductive inference (2) Objective inference

(3) Inductive inferencec (4) Pseudo inference

39. In Psychological and Educational experiments research is termed as :

(1) Analytical research (2) Historical research

(3) Clinical research (4) Stimulus- response research

40. Fundamental research is mainly carried out in :

(1) Field survey (2) Classroom

(3) Laboratory conditions (4) Social settings

**41.** $P = \dfrac{a_0 + a_1x + a_2x^2 + a_3x^3}{b_0 + b_2y^2 + b_3y^3 + b_4y^4}$, $a_i$ and $b_j$ are greater than 0 for all values of i and j. The minimum number of multiplications/division needed to evaluate P on input x = 2 and y = 3 is :

(1) 5 (2) 7 (3) 8 (4) 6

**42.** The set {1, 2, 3, 5, 7, 8} under multiplication module 10 is not a group. Given below are four possible reasons. Which one of them is false ?

(1) It is not closed

(2) 7 does have an inverse

(3) 3 does not have an inverse

(4) 8 does not have an inverse

**43.** In a binary max heap containing n numbers, the smallest element can be found in time

(1) O(n) (2) O(log n)

(3) O(log log n) (4) O(1)

**44.** Consider a weighted complete graph G on the vertex set {1, 2, ..., n} such that the weight of the edge (i, j) is $2\times|i-j|$, $1 \le i, j \le n$. The total weight of a minimum spanning tree of G is :

(1) n–1 (2) 2n–2

(3) $^nC_2$ (4) $n^2$

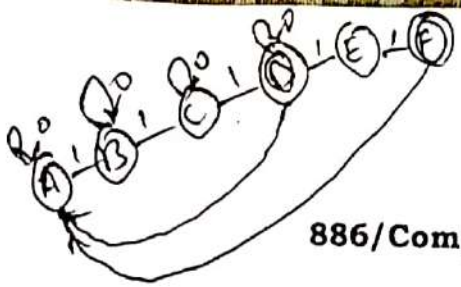
**45.** Consider the grammar G:S→aS,S→aSbS,S→ϵ. L(G)={x}. What is true ?

(1) Each prefix of x has more b's than a's.

(2) Each prefix of x has at least as many a's as b's

(3) Each prefix of x has equal a's and b's.

(4) x has even lengths.




(111+11111)*



**46.** Consider the regular language L = (111 + 11111) *. The minimum number of states in any DFA accepting this languages is :

(1) 6 (2) 5 (3) 8 (4) 9

**47.** What is the maximum number of different Boolean functions involving n variables can have logical value true ?

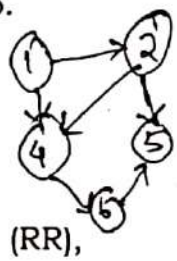
(1) $2^n$ (2) 2n (3) $2^{2^n}$ (4) 4n

$2^3 = 8$

2

**48.** Consider a DAG with V = {1, 2, 4, 5, 6}, and directed edges shown below. The edges are : 1 to 2, 1 to 4, 2 to 4, 2 to 5, 4 to 6, 6 to 5.

Which of the following is NOT a topological ordering ?




(1) 1 2 4 5 6 (2) 1 2 5 4 6

(3) 1 4 2 5 6 (4) 1 2 4 6 5

**49.** Consider three types of sets : regular sets (RRR), recursive sets (RR), recursively enumerable sets (R). Which statement is valid ?

(1) If language L is accepted by a DFA, $L \notin RRR$.

(2) $RRR \subseteq RR = R$

(3) $RRR \subseteq RR \subseteq R$

(4) $RRR \supseteq RR \supseteq R$

**50.** Consider the following recursive function in C programming language that takes two arguments.

```
Unsigned int fun (unsigned int i, unsigned int j)
{
 If (i > 0)
        return((i % j) + fun(i / j, j));
        else
        return 0;
}
```

i j
2198 10
-219 10
-21 10

9 + f(21, 10)
8 + f(219, 10)
1 + f(2, 10)
2 + f(0, 10) = 20

What is the value returned by fun (2198, 10) ?

(1) 98 (2) 19 (3) 20 (4) 21



3

2+3+

**51.** Consider the following sequence of instructions (⊕ : Exclusive OR, & : Boolean AND). S and T are Boolean variables.

S = S ⊕ T, T = S & T, S = T ⊕ S. Which one of the following is wrong ?

(1) Retains the values of S and T when they are false.

(2) Complements the values of S and T when they are true.

(3) Swaps S and T.

(4) Negates the value of S in only one case.

**52.** There are 10 adjacent parking spaces in the parking lot. When you arrive in your new swift car, there are already 7 cars in the lot. What is the probability that you can find two adjacent unoccupied spaces for your car ?

(1) $\frac{3}{7}$ (2) $\frac{7}{10}$ (3) $\frac{8}{15}$ (4) $\frac{2}{5}$

**53.** What value remains on the stack after the following sequence of instructions are carried out in Stack-Based Architecture ? SUB subtracts the top value on the stack from the next value down.

```
PUSH #4
PUSH #7
PUSH #8
ADD
PUSH #10
SUB
MUL
```

(1) 19 (2) 20 (3) 29 (4) 80

**54.** A given programme consists of a 100 – instruction loop that is executed 42 times. If it takes 15,000 cycles to execute the programme on a given system, what are the system's CPI ?

(1) 3.751 (2) 5.371

(3) 3.723 (4) 3.571

55. What is not true about self-modifying progrmmes ?
(1) Less common now
(2) Easier to debug
(3) Performance advantages of self-modifying code have been offset by advancement in memory design
(4) Difficult to debug

56. Which one of the following is not an attribute of load-store architecture ?
(1) Most of the instructions can refer memory
(2) Compiler becomes complex
(3) Have more registers
(4) Micro-architectures are simpler

57. If it takes 5 ns to read an instruction from memory, 2 ns to decode the instruction, 3 ns to read the register file, 4 ns to perform the computation required by the instruction, and 2 ns to write the result into the register file, what is the maximum clock rate of the processor ?
(1) 60.25 MHz (2) 49.5 MHz
(3) 65.2 MHz (4) 62.5 MHz

58. Suppose an unpipelined processor with a 25-ns cycle time is divided into 5 pipeline stages with latencies of 5, 7, 3, 6 and 4 ns. If the pineline latch latency is 1 ns, what is the latency of the resulting pipeline ?
(1) 40 ns (2) 42 ns (3) 35 ns (4) 44 ns

59. How many sets are there in a two-way set-associative cache with 32-KB capacity and 64-byte lines. How many bits of the address are used to select a set in this cache ?
(1) 6 (2) 8 (3) 12 (4) 9

**60.** We want to manufacture a hard disk with a capacity of 30 GB. If the technology used to manufacture the disks allows 1024-byte sectors, 2048 sectors/track, and 4096 tracks/ platter, how many platters are required ?

(1) 4 (2) 5 (3) 7 (4) 8

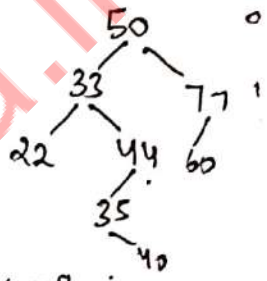
**61.** Suppose the following eight numbers are inserted in order into an empty binary search tree T:

50, 33, 44, 22, 77, 35, 60, 40

Which statement is not true ?

(1) It has height 4 (2) It has height 3

(3) 77 is the parent of 60 (4) 40 is right child




**62.** Let A be a set with 10 distinct elements. How many different reflexive and symmetric relations can be defined on A ?

(1) $2^{100}$ (2) $2^{90}$ (3) $2^{55}$ (4) $2^{45}$

**63.** The complexity of Tower of Hanoi problem (size N) is

(1) $O(e^N)$ (2) $O(e^{2N})$

(3) $O(2^N)$ (4) $O(2^{N/2})$

**64.** Consider 3 jobs $C_1$, $C_2$, $C_3$ requiring service time of 8, 4, and 6 respectively. The least average service time is achieved by the service order

(1) $C_2, C_3, C_1$ (2) $C_1, C_2, C_3$

(3) $C_3, C_2, C_1$ (4) $C_3, C_1, C_2$

**65.** What is not true about probabilistic algorithms ?

(1) The result is dependent only on the input data.

(2) It chooses a course of action at random.

(3) No particular input always produces the worst-case behaviour.

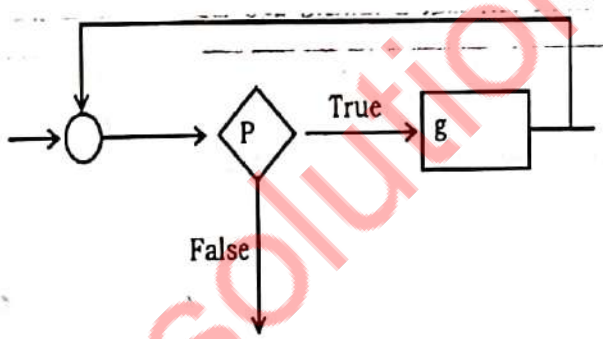
(4) It does not look for the best alternative.

66. The C programming language was developed by
(1) IBM
(2) Burroughs Computer Company
(3) HP
(4) AT & T Bell Labs

67. Which device connects multiple computers into a network in which multiple communications links can be in operation simultaneously ?
(1) Network interface card (2) Ethernet card
(3) Network hub (4) Switch

68. Which one of the following items is not generally used as a "control" over the data accuracy of an input file ?
(1) Check sum (2) Interruption count
(3) Hash total (4) Record count

69. Consider the following fragment of a flowchart.




Which one of the following is the "Structured Programming" construction that corresponds to the fragment ?
(1) While p Do g (2) Do g Until p
(3) If p Then g (4) While g Then p

**70.** Which of the following statement is correct ?

(1) A heap is always a binary search tree.

(2) A binary search tree is always a heap.

(3) A heap is always a complete binary tree.

(4) A complete binary tree is always a heap.


**71.** Which one of the following statements is not applicable to a buffer between a sending and a receiving process ?

(1) A buffer smooths speed variation between the processes.

(2) A buffer permits a receiving process to consume messages at a speed that is independent of the sending process.

(3) A buffer permits a sending process to occasionally generate messages at a speed faster than the receiving process can consume them.

(4) A buffer's finite capacity may limit the speed at which the sending process operates.

**72.** The value of the following expression is

(13/4*3) % 5 + 1.0

(1) 5.75 (2) 3.95 (3) 5 (4) 5.0

**73.** For which purpose should the system table space be used ?

(1) To hold sorted data

(2) To store personal user objects

(3) To prevent data file fragmentation

(4) To keep track of all created objects

**74.** SPSS stands for

(1) Statistical Package for System Science

(2) Systems Package for Social Science

(3) Statistical Package for Social Science

(4) Standard Package for Social Science

75. Address sequence of a hypothetical memory organization of words has the values 0000H, 0001H, ....., FFFEH, FFFFH. What is the capacity of the memory in words ?

(1) 65535
(2) 65536
(3) 64268
(4) 65534

76. The min-term expression of $f(p,q,r) = pq + qr' + pr'$ is :

(1) $m_2 + m_4 + m_6 + m_7$
(2) $m_0 + m_2 + m_4 + m_6$
(3) $m_2 + m_3 + m_6 + m_7$
(4) $m_0 + m_3 + m_6 + m_7$

77. Let x denote number system radix. The only value(s) of x that satisfies the equation $\sqrt{169_x} = 13_x$ is/are :

(1) $10_{10}$
(2) $11_{10}$
(3) $10_{10}$ and $11_{10}$
(4) Any value greater than 9

78. Which of the following is true for the language $\{a^p \mid p \text{ is prime}\}$ ?

GATE 2008-9

(1) Not accepted by any TM
(2) Regular but not context free
(3) Context free but not regular
(4) Neither regular nor context free but accepted by a TM.

79. In which of the following page replacement policies, Belady's anomaly may occur ?

(1) FIFO
(2) Optimal page replacement policy
(3) Least recently used
(4) Most recently used

CRC

**80.** Let F(x) be the generator polynomial used for Cyclic Redundancy Check (CRC). What is the condition that should be satisfied by F(x) to detect odd number of bits in error ?

(1) F(x) contains more than two terms

(2) F(x) does not divide $1 + x^k$ for any k not exceeding the frame length

(3) 1 + x is a factor of F(x)

(4) F(x) has an odd number of terms.

**81.** Which one of the following is not a client-server application ?

(1) Internet chat (2) Web browsing

(3) Ping (4) Email

**82.** Consider the transactions T1, T2 and T3 and the schedules S1 and S2 given below.

T1:r1(X);r1(Z);w1(X);w1(Z)

T2:r2(Y);r2(Z);w2(Z)

T3:r3(Y);r3(X);w3(Y)

S1:r1(X);r3(Y);r3(X);r2(Y);r2(Z);
W3(Y); w2(Z);r1(Z);w1(X);w1(Z)

S2:r1(X);r3(Y);r2(Y);r3(X);r1(Z);
r2(Z);w3(Y);w1(X);w2(Z);w1(Z)

Which one of the following statements about the schedules is TRUE ?

(1) Only S1 is conflict-serializable

(2) Only S2 is conflict-serializable

(3) Both S1 and S2 are conflict-serializable

(4) Neither S1 nor S2 is conflict-serializable

83. Consider the relation R (A, B, C, D, E, F) with functional Dependencies F = { AB→C, DC→AE, E→F}. What is/are the key(s) of the relation ?

(1) AB and DCE

(2) DCB and ABD

(3) AB,DC and E

(4) ABDCE

CBD → ABCDE
ABD → ABCDE

84. Consider the relations EMPLOYEE (Fname, Lname, Ssn, Bdate, Address, Sex, Salary, Super_ssn, Dno) and DEPARTMENT (Dname, Dnumber, Mgr_ssn, Mgr_start_date). The attribute "Dno" of EMPLOYEE relation is a foreign key referencing the "Dnumber" attribute of the DEPARTMENT relation. Which of the following query (relational calculus) retrieves the name and address of all employees who work for the 'Research' department ?

(1) {t.Fname, t.Lname, t.Address | EMPLOYEE(t) **AND** (∃d) (DEPARTMENT(d) **AND** d.Dname='Research' **AND** d.Mgr_ssn=t.Dno **AND** t.Ssn=t.Super_ssn)}

(2) {t.Fname, t.Lname d.Address | EMPLOYEE(t) **AND** (∃d) (DEPARTMENT(d) **AND** d.Dname-'Research')}

(3) {t.Fname, t.Lname t.Address | EMPLOYEE(t) **AND** (∃d) (DEPARTMENT(d) **AND** t.Ssn=d.Dnumber **AND** d.Dnumber=t.Dno)}

(4) {t.Fname, t.Lname, t.Address | EMPLOYEE(t) **AND** (∃d) (DEPARTMENT(d) **AND** d.Dname='Research' **AND** d.Dnumber=t.Dno)}

**85.** Which of the following concurrency control protocol(s) ensure both conflict serializability and freedom from deadlock ?

I: Two phase locking

II: Time-stamp ordering

(1) I only (2) II only

(3) Both I and II (4) Neither I nor II

**86.** Learning algorithm refers to

(1) An algorithm that can learn from experience

(2) A sub-discipline of computer science that deals with the design and implementation of learning algorithms

(3) A machine-learning approach that abstracts from the actual strategy of an individual algorithm and can therefore be applied to any other form of machine learning.

(4) Data mining techniques

**87.** K-means is a _____

(1) Partitioning clustering method

(2) Density based clustering method

(3) Grid based clustering method

(4) Divide and conquer method

**88.** Four jobs to be executed on a single processor system arrive at time 0 in the order A, B, C, D. Their burst CPU time requirements are 4, 1, 8, 1 time units respectively. The completion time of A under round robin scheduling with time slice of one time unit is :

(1) 10 (2) 4 (3) 8 (4) 9


0+3+1+1

89. A memory management system has 64 pages with 512 bytes page size. Physical memory consists of 32 page frames. Number of bits required in logical and physical address are :

(1) 14 and 15
(2) 14 and 29
(3) 15 and 14
(4) 16 and 32

90. A micro-programmed control unit

(1) is faster than a hard-wired control unit
(2) facilitates easy implementation of new instructions
(3) is useful when very small programs are to be run
(4) usually refers to the control unit of a microprocessor

91. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively. They both use the same subnet mask M. Which of the values of M should not be used if A and B belong to the same network ?

(1) 255.255.255.0
(2) 255.255.255.128
(3) 255.255.255.224
(4) 255.255.255.192

92. Which feature of OOP illustrated the code reusability ?

(1) Polymorphism
(2) Abstraction
(3) Encapsulation
(4) Inheritance

A vanishing point is a point on the image plane of the two-dimensional perspective projections (or drawings) of mutually parallel lines in 3D space appear to converge.



**93.** Encryption and Decryption in the responsibility of layer L. Which one of the following is correct ?

(1) L = Physical

(2) Application

(3) Network

(4) Datalink

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**94.** In graphics, the number of vanishing points depends on

(1) the number of axes cut by the projection plane

(2) the centre of projection

(3) the perspective projections of any set of parallel lines that are not parallel to the projection plane.

(4) the number of axes which are parallel to the projection plane

v.easy

UGC NET Dec 2015-III(32)

**95.** The end points of a line are (0, 0) and (6, 18). Compute each value of y as x steps from 0 to 3, by using equation of straight line :

(1) For x = 0, y = 1; x = 1, y = 3; x = 2, y = 4; x = 3, y = 9

(2) For x = 0, y = 2; x = 1, y = 3; x = 2, y = 6; x = 3, y = 9

(3) For x = 0, y = 0; x = 1, y = 3; x = 2, y = 6; x = 3, y = 9

(4) For x = 0, y = 0; x = 1, y = 3; x = 2, y = 4; x = 3, y = 6

I st way :-
→ eqn of a line passing through 2 points $(x_1, y_1)(x_2, y_2)$ is $\boxed{y - y_1 = \frac{(y_2 - y_1)}{(x_2 - x_1)} * (x - x_1)}$

Put value & get result.

(0,0) (6,18)

II nd way :-
eqn of a straight lines are in form $\boxed{y = mx + c}$

since one end is given (0,0) ie line is passing through origin.

so here, $\boxed{y = mx}$ and $c = 0$.

calculate from options value of m.

$x=0, y=0$

$x=1, y=3$ ie $m=3$

$x=2, y=6$

$x=3, y=9$

**96.** Consider the following :

I. $\neg\forall x(p(x))$

II. $\neg\exists x(p(x))$

III. $\neg\exists x(\neg p(x))$

iv. $\exists x(\neg p(x))$

Which of the above are equivalent ?

(1) I and III

(2) II and IV

(3) I, III, and IV

(4) I and IV

**97.** How many flip-flops are required for mod 18 counter ?

(1) 4 (2) 5 (3) 6 (4) 7

**98.** A perceptron has input weights W1 = 0.5 and W2 = 0.4 with the threshold value T = 0.3. What output does it give from the input x1 = 0.3 and x2 = 0.5 ?

(1) 0 (2) 0.35 (3) 0.05 (4) 1

**99.** Which of the following statements are false ?

I. Output of a JK flip-flop toggle at J = 0, K = 0

II. D flip-flop can be worked as buffer.

III. Output of T flip-flop remain same as input at T = 1.

IV. Output of RS flip-flop at S = 0 and R = 0 is undefined.

(1) I and IV

(2) II, III and IV

(3) I, III, and IV

(4) I, II, III and IV

100. Which of the following device changes from serial data to parallel data ?

(1) Counter (2) Multiplexer
(3) Demultiplexer (4) Register

NVivo (QDA) - is a qualitative data analysis software for researchers working on Windows and Mac OS. It was produced by QSR International. It help users organize and analyze non-numerical or unstructured data.

SPSS statistics - is a software package used for interactive or batched, statistical analysis.

99) The output node has a "threshold" t

Rule : If summed input $\geq t$, then it "fires" (output = 1)
else : (summed input $< t$) it does not fire (output = 0)
summed input $\sum_i w_i I_i$

UGC NET Jun 2016-III (61) A perceptron has input weight $W1 = -3.9$ and $W_2 = 1.1$ with threshold value $T = 0.5$. What output does it give for the input $x_1 = 1.3$ and $x_2 = 2.2$ ?

(a) -2.65 (b) -2.30 (c) 0 (d) 1

Ans-d