

PREVIEW QUESTION BANK

Module Name : SCPH08 Computer Science - Informatics - ENG
Exam Date : 30-Oct-2023 Batch : 14:30-17:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negativ Marks
Objective Question				
1	974001	Which approach can be used to create an artificial environment to generate data and information? 1. Inferential Approach 2. Empirical Approach 3. Simulation Approach 4. Experimental Approach A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
2	974002	Scientific method is based on _____ A. subjective consideration B. probabilistic predictions C. empirical evidences D. relevant concepts Choose the most appropriate answer from options given below: 1. A and B Only 2. B, C and D Only 3. A, B and D Only 4. A, B and C Only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
3	974003	A researcher wants to collect information from the gasoline customers. For example, he can choose a set as a number of stations, and conduct interviews. This sampling is termed as _____ 1. Simple random sampling 2. Systematic sampling 3. Convenience sampling 4. Stratified sampling	4.0	0.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

4	974004	If the researcher had no speculation to begin with, then he may be searching to provide an explanation for his findings on the premise of few theories. This concept is referred as _____ 1. Generalisation 2. Conceptualization 3. Aggregation 4. Interpretation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

5	974005	Match List I with List II <table><tr><th colspan="2">LIST I</th><th colspan="2">LIST II</th></tr><tr><td>A.</td><td>Pilot survey</td><td>I.</td><td>Preliminary survey</td></tr><tr><td>B.</td><td>Experience survey</td><td>II.</td><td>Questionnaire</td></tr><tr><td>C.</td><td>Descriptive survey</td><td>III.</td><td>Observation</td></tr><tr><td>D.</td><td>Interviews</td><td>IV.</td><td>Discussion with colleagues</td></tr></table> 1. A-I, B-II, C-III, D-IV 2. A-II, B-III, C-I, D-IV 3. A-I, B-III, C-IV, D-II 4. A-I, B-IV, C-II, D-III A1 : 1 A2 : 2 A3 : 3 A4 : 4	LIST I		LIST II		A.	Pilot survey	I.	Preliminary survey	B.	Experience survey	II.	Questionnaire	C.	Descriptive survey	III.	Observation	D.	Interviews	IV.	Discussion with colleagues	4.0	0.00
LIST I		LIST II																						
A.	Pilot survey	I.	Preliminary survey																					
B.	Experience survey	II.	Questionnaire																					
C.	Descriptive survey	III.	Observation																					
D.	Interviews	IV.	Discussion with colleagues																					

Objective Question

6	974006		4.0	0.00
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		When the dependent variable is not free from the influence of extraneous variable, then the relationship between the dependent and independent variables is called _____ 1. Correlated relationship 2. Confounded relationship 3. Interdependent relationship 4. Controlled relationship A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

7	974007	Which of the following is true about exploratory design? A. Rigid design B. Structured or well-defined instruments for data collection C. Non-probability sampling design (purposive or judgement sampling) D. No pre-planned design for analysis Choose the most appropriate answer from options given below: 1. C and D only 2. A and B only 3. A and C only 4. B and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

8	974008	Which of the following allows us to exclude variability from the experimental error, related to extraneous factors? 1. Principle of Randomization 2. Principle of Replication 3. Principle of Local Control 4. Principle of Formalization A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question				
9	974009	Identify the appropriate experimental design that is usually considered in agricultural research. 1. Randomized block design 2. Before-and-after with controlled design 3. Completely randomized design 4. Latin-square design A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
10	974010	Purposive sampling is also known as _____ 1. Probability sampling 2. Stratified sampling 3. Complex random sampling 4. Non-probability sampling A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
11	974011	If P_i represents the proportion of population included in stratum i, and n denotes the total sample size; then the number of elements selected from the stratum i will be _____ 1. $n * P_i$ 2. $i * n$ 3. $i * n * P_i$ 4. $i * P_i$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
12	974012		4.0	0.00

		To determine validity, the types of criteria are A. Content validity B. Concurrent validity C. Criterion-related validity D. Construct validity E. Predictive validity Choose the most appropriate answer from options given below: 1. A, B and C 2. A, B and D 3. A, C and E 4. A, C and D A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

13	974013	Which of the following is concerned with broad underlying feelings or motivations or with the course of life experience of an individual? 1. Focused interview 2. Non-directive interview 3. Structured interview 4. Clinical interview A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

14	974014	Which type of questionnaire provide no scope for any personal view of a respondent? 1. Open-ended 2. Structured 3. Unstructured 4. Close-ended A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

15	974015	What type of proforma has a collection of questions that are filled out by enumerators, who have been specially assigned to the task? 1. Schedule 2. Questionnaire 3. Survey 4. Audit A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

16

974016

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	Casual analysis	I.	Prediction of the dependent variable based on its covariance with all concerned independent variables.
B.	Canonical analysis	II.	Functional relationships existing between two or more variables.
C.	Inferential analysis	III.	Estimate the population values.
D.	Multiple discriminant analysis	IV.	Predict a set of dependent variables from their joint covariance with a set of independent variables, in case of both measurable and non-measurable variables.

Choose the correct answer from options given below:

1. A-III, B-II, C-I, D-IV

2. A-II, B-IV, C-III, D-I

3. A-III, B-I C-IV, D-II

4. A-I, B-IV, C-III, D-II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

17	974017	To indicate that a series has positive skewness, which of the following condition must satisfy? Here, $\bar{X}$ =Mean, M=Median, Z=Mode 1. $\bar{X} < M < Z$ 2. $Z < M < \bar{X}$ 3. $\bar{X} < Z < M$ 4. $\bar{X} > M > Z$	4.0	0.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

18	974018	When the two variables mutually influence or reinforce each other, it is called _____	4.0	0.00
		1. Reciprocal		
		2. Symmetrical		
		3. Asymmetrical		
		4. Proportional		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

19	974019	Association between two attributes that does not correspond to any real relationship, is called _____	4.0	0.00
		1. Partial association		
		2. Illusory association		
		3. Total association		
		4. No association		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

20	974020	A bell-shaped curve or the normal curve is termed as _____	4.0	0.00
		1. Mesokurtic		
		2. Hecokurtic		
		3. Recokurtic		
		4. Leptokurtic		
		A1 : 1		
		A2 : 2		

		A3 : 3		
		A4 : 4		
Objective Question				
21	974021	The central theorem states that _____ 1. If sample size increases, then the sampling distribution must approach an exponential distribution. 2. If sample size decreases, then the sampling distribution must approach normal distribution. 3. If sample size increases, then the sampling distribution must approach to normal distribution. 4. If sample size decreases, then the sampling distribution must approach an exponential distribution. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
22	974022	Size of standard error varies 1. Directly proportional to the sample size 2. Inversely proportional to the sample size 3. Equal to the sample size 4. One third of the sample size A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
23	974023	An estimator should approach the value of population parameter, as the sample size becomes larger. This property is referred to _____ 1. Property of Efficiency 2. Property of Sufficiency 3. Property of Consistency 4. Property of Unbiasedness A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
24	974024	In a random selection of 64 from 2400 intersections in a small city, the mean number of car accidents per year is 3.2 and the sample standard deviation is 0.8. Estimate the standard error of mean. 1. 0.097 2. 0.032 3. 0.015 4. 0.057 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
25	974025	If the significance level is 5 percent and the two-tailed test is applied, then compute the probability of the acceptance region. 1. 0.05 2. 0.02 3. 0.01 4. 0.95 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
26	974026	Which of the following is correct about the Type II error? 1. Rejects a null hypothesis when it is true 2. Accepts a null hypothesis when it is true 3. Rejects a null hypothesis when it is false 4. Accepts a null hypothesis when it is false A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
27	974027		4.0	0.00

Which of the following correctly explains a latent variable?

1. Useful in algebraic manipulations
2. Observable variable that may influence the criterion variables
3. Unobservable variable which may influence the criterion variables
4. Discrete variable

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

28 974028

Match List I with List II

LIST I		LIST II	
A.	Rosenzweig test	I.	Related to sociology
B.	Thematic apperception test	II.	Psychological test
C.	Rorschach test	III.	Assess personality characteristics
D.	Doll-play test	IV.	Describe ambiguous scenes

Choose the correct answer from options given below:

1. A-III, B-II, C-I, D-IV
2. A-III, B-IV, C-II, D-I
3. A-I, B-III, C-IV, D-II
4. A-I, B-IV, C-III, D-II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29 974029

The student t-test was developed by _____

1. Joseph Sandler
2. Sir William S. Gosset
3. Professor Yule
4. Professor R. A. Fisher

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

30	974030	Match List I with List II <table> <tr> <th colspan="2">LIST I</th><th colspan="2">LIST II</th></tr> <tr> <td>A.</td><td>Personal interviews</td><td>I.</td><td>Indirect oral investigation</td></tr> <tr> <td>B.</td><td>Structured interviews</td><td>II.</td><td>Predetermined questions</td></tr> <tr> <td>C.</td><td>Non-directive interviews</td><td>III.</td><td>Verbal abilities</td></tr> <tr> <td>D.</td><td>Focused interviews</td><td>IV.</td><td>Freedom to explore reasons and motives</td></tr> </table> Choose the correct answer from options given below: 1. A-III, B-II, C-I, D-IV 2. A-III, B-IV, C-II, D-I 3. A-I, B-III, C-IV, D-II 4. A-I, B-II, C-III, D-IV A1 : 1 A2 : 2 A3 : 3 A4 : 4	LIST I		LIST II		A.	Personal interviews	I.	Indirect oral investigation	B.	Structured interviews	II.	Predetermined questions	C.	Non-directive interviews	III.	Verbal abilities	D.	Focused interviews	IV.	Freedom to explore reasons and motives	4.0	0.00
LIST I		LIST II																						
A.	Personal interviews	I.	Indirect oral investigation																					
B.	Structured interviews	II.	Predetermined questions																					
C.	Non-directive interviews	III.	Verbal abilities																					
D.	Focused interviews	IV.	Freedom to explore reasons and motives																					

Objective Question

31	974031	A card from a pack of 52 playing cards was found missing. From the remaining cards of the pack, 3 cards are drawn at random (without replacement), and they are found to be all spades. What is the probability that the lost card is a spade? 1. $\frac{10}{49}$ 2. $\frac{20}{49}$ 3. $\frac{30}{49}$ 4. $\frac{40}{49}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

32	974032		4.0	0.00
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A problem in Mathematics is given to 3 students whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$. Find the probability of solving it correctly by only one of them.

1. $\frac{3}{4}$

2. $\frac{11}{24}$

3. $\frac{13}{24}$

4. $\frac{1}{4}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33 974033

The value of $\int_0^{\pi} \frac{x dx}{1 + \sin x}$ is

1. 2π

2. π

3. $\pi/2$

4. π^2

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

0.00

Objective Question

34 974034

The value of $\int \frac{dx}{x(x^3 + 1)}$ is

1. $\frac{1}{3} \log \left| \frac{x^3}{x^3 + 1} \right| + c$

2. $\frac{1}{4} \log \left| \frac{x^3}{x^2 + 1} \right| + c$

3. $\frac{1}{3} \log \left| \frac{x^2}{x^2 + 1} \right| + c$

4. $\frac{1}{3} \log \left| \frac{x^2}{x^2 + x + 1} \right| + c$

4.0

0.00

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

35	974035	The point on the curve $y = x^2 + 2x - 8$, where x lies in $[-4, 2]$ and the tangent is parallel to x-axis, is _____ 1. $(-1, -9)$ 2. $(1, -9)$ 3. $(1, 9)$ 4. $(2, -9)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

36	974036	For the function $f(x) = x-3$, where x is a real number, which of the following statements are true? A. $f(x)$ is continuous at $x=3$. B. $f(x)$ is not differentiable at $x=3$. C. $f(x)$ is continuous at $x=0$. D. $f(x)$ is differentiable at $x=3$. Choose the most appropriate answer from the options given below: 1. A, B and C only 2. B, C and D only 3. A, C and D only 4. A, B and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

37	974037	Which of the following statement is TRUE? 1. The rank of a product of two matrices cannot exceed the rank of either matrix. 2. The rank of a product of two matrices can exceed the rank of either matrix. 3. The rank of a product of two matrices is equal to the sum of the ranks of two matrix. 4. The rank of a product of two matrices is equal to the product of the ranks of two matrix.	4.0	0.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38	974038	Let V and W be vector spaces, and let $T: V \rightarrow W$ be linear. If V is finite dimensional, then which of the following is correct? 1. $\text{nullity}(T) + \text{rank}(T) = \dim(V)$ 2. $\text{nullity}(T) - \text{rank}(T) = \dim(V)$ 3. $\text{nullity}(T) \times \text{rank}(T) = \dim(V)$ 4. $\text{nullity}(T) + \text{rank}(T) > \dim(V)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

39	974039	Let V and W be finite dimensional vector spaces over F, and T is a function from V to W. In this regard, some of the following statements are correct. A. If T is linear, then T preserves sums and scalar products. B. T is one-to-one, if and only if, there is a vector x such that $T(x)=0$ when $x=0$ C. If $T(x+y) = T(x) + T(y)$, then T is linear. D. If T is linear, then $T(0_V)=0_W$ Choose the most appropriate answer from the options given below: 1. A and D only 2. A and B only 3. B and D only 4. C and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

40	974040		4.0	0.00
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Let H be a normal subgroup of group G , then some of the following statements are true.

- A. For all h in H and g in G , ghg^{-1} is in H .
- B. For all g in G , $gHg^{-1} = H$.
- C. For all g in G , the left coset gH is equal to the right coset Hg .
- D. Every left coset of H in G is not a right coset.

Choose the most appropriate answer from options given below:

- 1. B, C and D only
- 2. A, B and D only
- 3. A, B and C only
- 4. A, C and D only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41	974041	The variance of the sum obtained on 10 independent rolls of a fair die is _____ 1. 175/6 2. 173/3 3. 177/5 4. 175/2 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

42	974042	Let $f: G_1 \rightarrow G_2$ be a homomorphism of groups, and let a and b be elements of G_1. Also, assume K to be the kernel of f and $a^{-1}b$ is in K. In this context, some of the following statements are true. A. $f(a) = f(b)$ B. $f(a^{-1}b)$ is identity element of G_2. C. b is in coset aK D. The cosets bK and aK are not equal. Choose the most appropriate answer from options given below: 1. A, B and D only 2. A, B and C only 3. B, C and D only 4. A, C and D only A1 : 1 A2 : 2	4.0	0.00
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A3 : 3

A4 : 4

Objective Question

43	974043	For $f(x) = px^2 + qx + r$, x lies in the range $[a, a+h]$. The value of θ, irrespective of the values of p, q, r, a, h, in Langrange's theorem, is always _____ 1. $1/2$ 2. 2 3. 1 4. $3/2$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

44	974044	If $x^m y^n = (x+y)^{m+n}$, then dy/dx is equal to 1. y/x 2. x/y 3. xy 4. $x+y$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

45

974045

Match List I with List II

LIST I (Method)		LIST II (Rate of Convergence)	
A.	Muller method	I.	Linear
B.	Chebyshev method	II.	1.618
C.	Secant method	III.	3
D.	Regula-Falsi method	IV.	1.84

Choose the correct answer from options given below:

1. A-I, B-II, C-III, D-IV

2. A-II, B-I, C-III, D-IV

3. A-I, B-II, C-IV, D-III

4. A-IV, B-III, C-II, D-I

4.0

0.00

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

46	974046	The probability distribution characterized by two moments is 1. Gaussian 2. Uniform 3. Exponential 4. Beta A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

47	974047	The value of $\int_0^{2\pi} \frac{1}{e^{\sin x} + 1} dx$ is 1. $\pi/2$ 2. 2π 3. 3π 4. π A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

48	974048	Consider the following methods in reference of numerical integration. A. Richardson B. Romberg C. Lobatto D. Simpson Choose the most appropriate answer from options given below: 1. A, B and C only 2. B, C and D only 3. A, B and D only 4. A, C and D only	4.0	0.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 974049

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	Cramer rule	I.	$\frac{n^3}{2}$
B.	Gauss-Jordan elimination method	II.	$\frac{n^3}{3}$
C.	Gauss elimination method	III.	$(n^2 - 1)(n!) + n$
D.	Cholesky method	IV.	$\frac{n^3}{6}$

Choose the correct answer from options given below:

1. A-I, B-II, C-III, D-IV
2. A-III, B-I, C-II, D-IV
3. A-II, B-I, C-III, D-IV
4. A-I, B-II, C-IV, D-III

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 974050

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	Rolle's Theorem	I.	Finding primitive of a continuous function
B.	Mean Value Theorem	II.	Constant function
C.	Zero Derivative Theorem	III.	Tangent line parallel to secant
D.	Second Fundamental Theorem of Calculus	IV.	Horizontal tangent exists

Choose the correct answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-I, C-III, D-IV
3. A-I, B-II, C-IV, D-III
4. A-IV, B-III, C-II, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51	974051	The number of divisors of 2100 is 1. 42 2. 36 3. 78 4. 72 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

52	974052	Match List I with List II	4.0	0.00																				
<table><tr><th colspan="2">LIST I</th><th colspan="2">LIST II</th></tr><tr><td>A.</td><td>Session layer</td><td>I.</td><td>Provides error detection and correction</td></tr><tr><td>B.</td><td>Transport layer</td><td>II.</td><td>Provides end-to-end delivery</td></tr><tr><td>C.</td><td>Application layer</td><td>III.</td><td>Provides synchronization points</td></tr><tr><td>D.</td><td>Data link layer</td><td>IV.</td><td>Supports an end-user process and performs required file transfer</td></tr></table>					LIST I		LIST II		A.	Session layer	I.	Provides error detection and correction	B.	Transport layer	II.	Provides end-to-end delivery	C.	Application layer	III.	Provides synchronization points	D.	Data link layer	IV.	Supports an end-user process and performs required file transfer
LIST I		LIST II																						
A.	Session layer	I.	Provides error detection and correction																					
B.	Transport layer	II.	Provides end-to-end delivery																					
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D.	Data link layer	IV.	Supports an end-user process and performs required file transfer																					
Choose the correct answer from the options given below:																								
1. A-I , B-II, C-III, D-IV																								
2. A-II , B-I, C-III, D-IV																								
3. A-III , B-II, C-IV, D-I																								
4. A-I , B-II, C-IV, D-III																								
A1 : 1																								
A2 : 2																								
A3 : 3																								
A4 : 4																								

Objective Question

53	974053	Which of the following is not a proposition? 1. 4 is a prime number. 2. $3+3 = 6$ 3. 2 is an even number and 1 is not. 4. $x = 3$ A1 : 1 A2 : 2	4.0	0.00
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		A3 : 3		
		A4 : 4		
Objective Question				
54	974054	How many parity bits are required in Hamming code if message size is 8 bits? 1. 2 2. 4 3. 6 4. 8 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
55	974055	Consider a noiseless channel with bandwidth of 3000 Hz that is transmitting a signal with two signal levels. The maximum bit rate is 1. 3000 bps 2. 6000 bps 3. 1500 bps 4. 4000 bps A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
56	974056	Given below are two statements: Statement I: World wide web is a method of accessing information using the Internet. Statement II: ISP stands for Intelligent Service Provider. In the light of above statements, choose the <i>correct</i> answer from options given below 1. Both Statement I and Statement II are true 2. Both Statement I and Statement II are false 3. Statement I is true but Statement II is false 4. Statement I is false but Statement II is true A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question

57

974057

Match List I with List II

List I Ethernet Technology		List II Cable Type	
A.	10 Base 5	I.	Fibre optics
B.	10 Base 2	II.	Thick coax
C.	10 Base T	III.	Thin coax
D.	10 Base F	IV.	Twisted Pair

Choose the correct answer from options given below:

1. A-II, B-III, C-IV, D-I

2. A-I, B-II, C-III, D-IV

3. A-II, B-I, C-IV, D-III

4. A-I, B-IV, C-III, D-II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

0.00

Objective Question

58	974058	The generating function of the sequence $a_n = n$ is 1. $1/(1-x)^2$ 2. $x/(1-x)^2$ 3. $x^2/(1-x)^2$ 4. $x^2/(1-x^2)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

59	974059	If A is a finite set containing 3 different elements, then the number of relations on A is equal to 1. 246 2. 462 3. 256 4. 512 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

60	974060	A group G has an order of 84. The size of the largest possible proper subgroup of G is 1. 14 2. 12 3. 42 4. 84 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

61	974061	A function $f(x)$ is linear and has values 29 at $x = -2$, and 39 at $x = 3$. Then, its value at $x = 5$ will be _____. 1. 59 2. 45 3. 43 4. 35 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

62	974062	Assume a page reference string for a process with m frames (initially all empty). The page reference string has length p with n distinct page numbers occurring in it. Consider any page-replacement algorithm. The lower bound and upper bound on number of page faults will be _____. 1. $p, n-1$ 2. p, n 3. $p-1, n$ 4. n, p A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

63	974063		4.0	0.00
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Consider the following statements regarding scheduling:

Statement I: Short-term scheduler selects those jobs that are ready to execute, and allocates CPU to them.

Statement II: Medium-term scheduler is used especially with time-sharing systems as an intermediate scheduler.

Select the correct answer from following options

1. Statement I is True but Statement II is False
2. Statement I is False but Statement II is True
3. Both Statement I and Statement II are True
4. Both Statement I and Statement II are False

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

64 974064

Consider four processes W, X, Y, Z being scheduled on a CPU as per Round Robin algorithm with a time quantum of 2 units. Also, the respective processing times and arrival times (in ms) are tabulated as following:

Process	Processing Time	Arrival Time
W	4	6.001
X	6	0.000
Y	5	1.001
Z	4	5.001

Consider following statements regarding the waiting time (rounded off to the nearest hundred) :

Statement I: Waiting time for X and Z are equal.

Statement II: Waiting time for Y and W are equal.

Select correct answer from the following options:

1. Statement I is True but Statement II is False
2. Statement I is False but Statement II is True
3. Both Statement I and Statement II are True
4. Both Statement I and Statement II are False

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65 974065

		Consider the following statements regarding techniques used for recovery from deadlock in a computer system: Statement I: Increasing the resource allocation for all processes, involved in the deadlock, is an effective method to ensure recovery. Statement II: Preemption involves terminating one or more processes to break the circular wait condition, and resolve deadlock. Select correct answer from the following options 1. Statement I is True but Statement II is False 2. Statement I is False but Statement II is True 3. Both Statement I and Statement II are True 4. Both Statement I and Statement II are False A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

66	974066	Suppose that a disk drive has 5000 cylinders, numbered from 0 to 4999. The drive is assumed to be currently serving a request at cylinder 143, provided that the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is: 86, 1470, 1774, 948, 1509, 1022, 1750, 130 Starting from the current head position, what is the total distance (in cylinders) that the disk arm needs to move, to satisfy C-SCAN disk-scheduling algorithm? 1. 3363 2. 9813 3. 9769 4. 3319 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

67	974067	Consider a logical address space of 8 pages with 1024 words, each mapped onto a physical memory of 32 frames. How many bits are there in logical address and physical address, respectively? 1. 10, 5 2. 15, 13 3. 13, 15 4. 5, 10 A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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A4 : 4

Objective Question

68

974068

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	RAID Level 0	I.	Refers a disk array with striping at the level of blocks, but without any redundancy
B.	RAID Level 1	II.	Refers to disk mirroring
C.	RAID Level 3	III.	Uses a parity disk to store the information generated by RAID controller, instead of striping it with data
D.	RAID Level 4	IV.	Uses a dedicated parity disk, and block-level striping across multiple disks

Choose the correct answer from options given below:

1. A-I, B-III, C-II, D-IV
2. A-I, B-II, C-III, D-IV
3. A-III, B-I, C-II, D-IV
4. A-IV, B-III, C-II, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69	974069	The value returned by an operating system upon successful completion of a program is ____ . 1. -1 2. 1 3. 0 4. No value is returned A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

70	974070		4.0	0.00
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		What is the correct output of the following C program? <pre>void main() { int a, b; a =10, 20; b = (10, 20); printf("%d, %d", a, b); }</pre> 1. 10, 20 2. 20, 10 3. compilation error 4. 10, 10 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

71	974071	The output of the following C code is ____ . <pre>void main() { printf("%d", printf("hello")); }</pre> 1. hello5 2. hello 3. compilation error 4. "hello" A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

72	974072	Which of the following operator performs operation with only integer operands? 1. + 2. / 3. * 4. % A1 : 1	4.0	0.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

73	974073	Given below are two statements: Statement I: Evaluation of the expression involving operators will stop, if one of its components is evaluated as false Statement II: Evaluation of the expression involving operators takes place from left to right In the light of above statements, choose the <i>correct</i> answer from options given below: - Both Statement I and Statement II are true - Both Statement I and Statement II are false - Statement I is true but Statement II is false - Statement I is false but Statement II is true A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

74	974074	Which one of the following is NOT a valid declaration of a variable in C? - signed int x; - unsigned short y; - signed string w; - unsigned short int z; Choose the most appropriate answer from the options given below: - A and C Only - B and D Only - C Only - B, C and D Only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

75	974075		4.0	0.00
----	--------	--	-----	------

Consider the following program fragment, and predict its output.

```
void main()
{
int a=4, b=6;
printf("%d%%", a=b);
}
```

1. compilation error
2. 0
3. 6%
4. 1

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

76	974076	<pre>void main() { int i ; for (i=0; i<=5; printf("%d", i)) i = i+1; }</pre> The output of this program is 1. 012345 2. 123456 3. 12345 4. compilation error A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

77	974077		4.0	0.00
----	--------	--	-----	------

Match List I with List II

LIST I		LIST II	
A.	File	I.	memory allocation
B.	Detection algorithm	II.	deadlock
C.	Buddy system	III.	abstract data type
D.	Trojan horse	IV.	security concern

Choose the correct answer from options given below:

1. A-I, B-II, C-III, D-IV
2. A-III, B-II, C-I, D-IV
3. A-III, B-I, C-II, D-IV
4. A-IV, B-III, C-II, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 974078

Match List I with List II

LIST I		LIST II	
A.	Bellman Ford (average case)	I.	$O(V^3)$
B.	Prims algorithm	II.	$O(V^2)$
C.	Floyd Warshall algorithm	III.	$O(VE^2)$
D.	Edmonds Karp algorithm	IV.	$O(VE)$

Choose the correct answer from options given below:

1. A-I, B-II, C-IV, D-III
2. A-I, B-II, C-III, D-IV
3. A-IV, B-II, C-I, D-III
4. A-IV, B-II, C-III, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

79 974079

For a bipartite graph, denoted as $K_{m,n}$, the maximum possible connections are

1. $m \times n$
2. m^n
3. $m+n$
4. n^m

A1 : 1

A2 : 2

A3 : 3

4.0

0.00

4.0

0.00

		A4 : 4		
Objective Question				
80	974080	The average number of comparisons performed by merge sort algorithm, while merging two sorted lists of length 2 is 1. 8/5 2. 8/3 3. 11/6 4. 11/8 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
81	974081	Some of the following statements are NOT correct about B+ tree that is used for creating an index of relational database table. A. B+ tree is also called as a height imbalanced tree. B. Non-leaf nodes have pointers to data records. C. Key values in each node are kept in sorted order. D. Leaf nodes have pointers to data records. E. Each leaf node has a pointer to next leaf node. Choose the most appropriate answer from options given below: 1. A and B Only 2. C and E Only 3. A and D Only 4. C, D and E Only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
82	974082	In data structures, stacks are useful for implementing _____. A. Radix sort B. Breadth-first search C. Recursion D. Depth-first search Choose the most appropriate answer from the options given below: 1. A and B Only 2. A and C Only 3. B and D Only 4. C and D Only	4.0	0.00

A1 : 1

A2 : 2

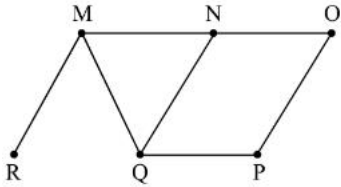
A3 : 3

A4 : 4

Objective Question

83	974083	Consider the following two functions: $f(n) = \begin{cases} n^3, & 0 \leq n < 10000 \\ n^2, & \text{otherwise} \end{cases}$ $g(n) = \begin{cases} n, & 0 \leq n < 100 \\ n^2 + 4n, & \text{otherwise} \end{cases}$ Some of the following statements are true. A. $f(n)$ is $O(n^3)$ B. $g(n)$ is $O(n^3)$ C. $O(f(n))$ is same as $O(g(n))$ D. $g(n)$ is $O(n)$ E. $g(n)$ is $O(n^2)$ Choose the most appropriate answer from the options given below: 1. A and C Only 2. A and D Only 3. A, B and C Only 4. C and E Only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

84	974084	The breadth first search algorithm has been implemented using queue data structure on the given graph.  Identify one of the possible order of visiting the nodes of the graph. 1. Q,M,N,P,R,O 2. M,N,O,P,Q,R 3. N,Q,M,P,O,R 4. Q,M,N,P,O,R A1 : 1 A2 : 2	4.0	0.00
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A3 : 3

A4 : 4

Objective Question

85	974085	Consider the following table, named as 'a', and answer the given query. <table><tr><th>Name</th><th>ID</th></tr><tr><td>Amit</td><td>1</td></tr><tr><td>Shweta</td><td>2</td></tr><tr><td>Lavanya</td><td>3</td></tr><tr><td>Rohit</td><td>4</td></tr><tr><td>Isha</td><td>5</td></tr></table> How many rows will be returned by the following query? <pre>SELECT * FROM a p, a q, a r WHERE p.id < q.id AND q.id < r.id;</pre> 1. 0 2. 2 3. 5 4. 10 A1 : 1 A2 : 2 A3 : 3 A4 : 4	Name	ID	Amit	1	Shweta	2	Lavanya	3	Rohit	4	Isha	5	4.0	0.00
Name	ID															
Amit	1															
Shweta	2															
Lavanya	3															
Rohit	4															
Isha	5															

Objective Question

86	974086	Consider the following table, named as 'a', and answer the given query. <table><tr><th>Name</th><th>ID</th></tr><tr><td>Amit</td><td>1</td></tr><tr><td>Shweta</td><td>2</td></tr><tr><td>Lavanya</td><td>3</td></tr><tr><td>Rohit</td><td>4</td></tr><tr><td>Isha</td><td>5</td></tr></table> How many rows will be returned by the following query? <pre>SELECT * FROM a p, a q, a r WHERE p.id < q.id AND q.id <= r.id;</pre> 1. 10 2. 20 3. 30 4. 40	Name	ID	Amit	1	Shweta	2	Lavanya	3	Rohit	4	Isha	5	4.0	0.00
Name	ID															
Amit	1															
Shweta	2															
Lavanya	3															
Rohit	4															
Isha	5															

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

87

974087

Consider the following table, named as 'a', and answer the given query.

Name	ID
Amit	1
Shweta	2
Lavanya	3
Rohit	4
Isha	5

How many rows will be returned by the following query?

SELECT *

FROM a p, a q, a r

WHERE p.id < q.id

AND q.id < r.id

AND r.id < p.id;

1. 0

2. 1

3. 10

4. 50

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

0.00

Objective Question

88	974088		4.0	0.00
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Consider the following table, named as 'a', and answer the given query.

Name	ID
Amit	1
Shweta	2
Lavanya	3
Rohit	4
Isha	5

How many rows will be returned by the following query?

```
SELECT *
```

```
FROM a p, a q, a r
```

```
WHERE p.id < q.id
```

```
AND q.id > r.id;
```

1. 15
2. 30
3. 45
4. 50

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

89 974089

Consider the following table, named as 'a', and answer the given query.

Name	ID
Amit	1
Shweta	2
Lavanya	3
Rohit	4
Isha	5

How many rows will be returned by the following query?

```
SELECT *
```

```
FROM a p, a q, a r
```

```
WHERE p.id <= q.id
```

```
AND q.id <= r.id
```

```
AND r.id <= p.id;
```

1. 0
2. 1
3. 3
4. 5

A1 : 1

A2 : 2

A3 : 3

4.0

0.00

A4 : 4

Objective Question

90	974090	Which of the following is not a regular language over $\{0,1\}$? 1. Set of all strings beginning with 00 2. Set of all strings ending with 11 3. Set of all palindromes 4. Set of all strings containing 111 as subtring A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

91	974091	Arrange the following in increasing order of their computational capabilities. A. Push Down Automata B. Turing Machine C. Linear Bounded Automata D. Finite Automata Choose the correct answer from options given below: 1. C, A, B, D 2. D, C, A, B 3. A, C, B, D 4. D, A, C, B A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

92	974092	Given below are two statements: one is labelled as Assertion A and other is labelled as Reason R Assertion A: A language accepted by a Push Down automata is context free language. Reason R: The Push Down automata has a stack. In the light of the above statements, choose the <i>correct answer</i> from options given below 1. Both A and R are true and R is the correct explanation of A 2. Both A and R are true but R is NOT the correct explanation of A 3. A is true but R is false 4. A is false but R is true A1 : 1 A2 : 2	4.0	0.00
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A3 : 3

A4 : 4

Objective Question

93	974093	Every recursive language is A. called Type-0 language B. proper superset of context-free languages C. recognized by Turing machine D. regular language Choose the most appropriate answer from options given below 1. A, B Only 2. A, B, C Only 3. A, B, D Only 4. B, C, D Only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

94	974094	Let $w = abbbba$ be a string that belongs to $\{a,b\}^*$, and w is not recognized by any Finite State Machine (FSM). Given below are two statements: Statement I: A FSM cannot fix the mid-point of the string. Statement II: A FSM cannot match the second half of the string with the first half. In the light of above statements, choose the <i>correct</i> answer from options given below 1. Both Statement I and Statement II are true 2. Both Statement I and Statement II are false 3. Statement I is true but Statement II is false 4. Statement I is false but Statement II is true A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

95	974095		4.0	0.00
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Match List I with List II

LIST I		LIST II	
A.	Regular grammar	I.	Linear bounded automata
B.	Context-free grammar	II.	Turing machine
C.	Context-sensitive grammar	III.	Push down automata
D.	Unrestricted grammar	IV.	Finite automata

Choose the correct answer from options given below:

1. A-IV, B- III, C-I, D-II
2. A-IV ,B- I ,C-II ,D-III
3. A-I ,B-II ,C-IV ,D-III
4. A-II ,B-III ,C-I ,D-IV

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96	974096	An CPU has 24-bit instructions, and a program starts at address 300 (in decimal). Which one of the following is a valid program counter (all values are in decimal)? 1. 400 2. 500 3. 600 4. 700 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

97	974097	A 4-stage pipeline has stage delays as 150, 120, 160 and 140 ns respectively. Registers that are used between the stages have a delay of 5 ns each. Assuming constant clock rate, what is the total time taken to process 1000 data items on this pipeline? 1. 120.4 μs 2. 160.5 μs 3. 165.5 μs 4. 590.0 μs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

98	974098	Consider the following sequence of micro-operations. MBR $\leftarrow$ PC MAR $\leftarrow$ X PC $\leftarrow$ Y Memory $\leftarrow$ MBR Which one of the following is a possible operation performed by this sequence? 1. Instruction fetch 2. Operand fetch 3. Conditional branch 4. Initiation of interrupt service A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

99	974099	Consider a 4-way set associative cache consisting of 128 lines, and having a line size of 64 words. The CPU generates a 20-bit address of a word in main memory. The number of bits in the TAG, LINE and WORD fields are respectively. 1. 9, 6, 5 2. 9, 5, 6 3. 7, 5, 8 4. 7, 7, 6 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

100	974100	If the associativity of a processor cache is doubled, while keeping the capacity and block size unchanged, which one of the following is guaranteed NOT to be affected? 1. Width of tag comparator 2. Width of set index decoder 3. Width of way selection multiplexer 4. Width of processor to main memory data bus A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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