

GATE 2021 Examination* (Memory Based)

Computer Science Engineering

Test Date: 13th Feb 2021

Test Time: 3-00 pm to 6-00 pm

Stream Name: Computer Science Engineering

General Aptitude

1. Gita plays guitar _____ her sister.

- (A) as well as
 (B) as worse as
 (C) as better as
 (D) as good as

[Ans. D]

2. Pen: write: knife::

From above results what will be the result in

- (A) Cut
 (B) Blunt
 (C) Vegetable
 (D) Sharp

[Ans. *]

3. 3:13:6 total student in three class

If 18 more added in each

The ratio become 15:35:21

What was the total number of students in beginning?

[Ans. *]4. $\left(x - \frac{1}{2}\right)^2 - \left(x - \frac{3}{2}\right)^2 = x + 2$

x = ?

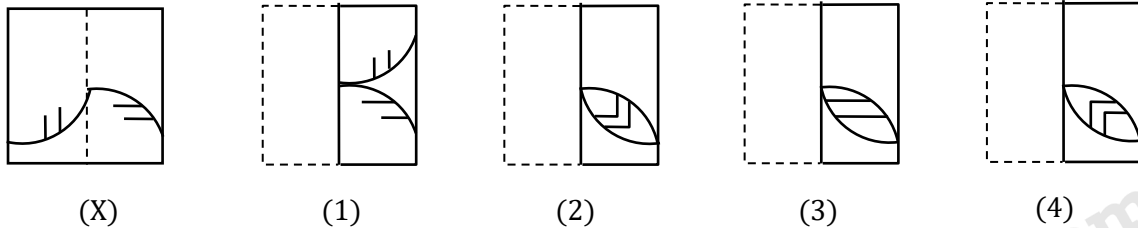
[Ans. *] Range: 4 to 45. If $\cos \theta$ in degree, angle between longest diagonal of cube.What is the value of θ ?

- (A) $1/2$
 (B) $1/\sqrt{2}$
 (C) $\sqrt{3}/2$
 (D) $3/2$

[Ans. *]

6. I play piano _____ my sister
 (A) as well as
 (B) as worse as
 (C) as better as
 (D) as nicest as
[Ans. D]

7. Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



- (A) 1
 (B) 2
 (C) 3
 (D) 4
[Ans. D]

Technical

1. Block size 64 Byte
 Cache size 2KB
 VAS 32bit
 Tag field 22bit
 if memory is byte addressable
 The associativity of mapping?
[Ans. *]

2. Which are of the following which are of the following is not I.C. representation of
 (A) Symbol task
 (B) CFG
 (C) AST
 (D) AC
[Ans. A,B]

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3. Which of the following FDS can be inferred $P \rightarrow QR, RS \rightarrow T$

- (A) $P \rightarrow R$
- (B) $P \rightarrow S$
- (C) $S \rightarrow T$
- (D) $P \rightarrow Q$

[Ans. *]

4. For the given Schedule S for transaction T_1, T_2, T_3

S: $R_2(y), R_3(z), R_1(t), w(x), R_2(z),$

$w_2(y), R_3(x), w_3(z)$

Check for conflict serializable.

[Ans. *]

Conflict serializable.

5. Worst case time complexity recursive binary search algorithm for n elements of a sorted array.

6. In a binary search tree (in worst case). What are the number of comparisons?

- 1. $\theta(n)$
- 2. $\theta(\log n)$

[Ans. *] $\theta(\log n)$

7. BST T, time to find element smaller than maximum element in T?

- (A) $O(n)$
- (B) $O(1)$
- (C) $O(n \log n)$
- (D) $O(\log n)$

[Ans. A]

8. If $(0.1101)_2 = (0.8xy5)_{10}$ then the decimal value of $x + y$ is_____.

[Ans. *] Range: 3 to 3

9. Page size = 4kB = 2^{12}

PTE = 8B

39 bits

[Ans. *]

10. Identify regular expression that generated all strings over $\Sigma = \{a, b\}$ where number of a's is divisible by 3.

[Ans. *]

11. L_1 is reg, L_2 is CFL

Which of the following is CFL?

$$\begin{array}{l} L_1 \cap \overline{L_2} \\ \overline{L_1} \cap L_2 \text{ is CFL} \end{array} \left\{ \begin{array}{l} L_1 \cup L_2 \text{ is CFL} \\ L_1 \cap L_2 \text{ is CFL} \\ L_1 L_2 \text{ IS CFL} \end{array} \right.$$

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