Question: What are Universal GATE?
Answer: The NAND and NOR gates are universal gates.

Question: The DMA transfer is initiated by
Answer: I/O devices

Question: T flip-flop is used as
Answer: toggle switch

Question: The method of mapping the consecutive memory blocks to consecutive cache blocks is called
Answer: Direct

Question: Excess - 3 - code is also known as
Answer: Self-complementing code

Question: Which one of the following offers CPUs as integrated memory or peripheral interfaces?
Answer: Microcontrollers

Question: Multiplexer is also known as
Answer: Data Selector

Q. 10 vertices, what is max no of edges in disconnected graph?

[NAT - 1 Mark]

$$\frac{(n-k)(n-k+1)}{2}$$

$$\Rightarrow \frac{(10-2)(10-2+1)}{2}$$

$$\Rightarrow \frac{8 \times 9}{2} = \boxed{36}$$

Q. R (A B C D E)

AB → C

BC → D

C → E

$AB^{+} = ABCDE$

Find the number of super keys

[NAT - 1 Mark]

$$\boxed{2^{n-2}} = 2^{5-2} = 2^{3} = \boxed{8}$$

Q. The ___ is too high to be considered ___.

[MCQ]

A. Fare/fare

B. Fair/Fair

C. Fare/fair

D. Fair/Fare

Q. Floating Point

$$A \to C1400000H$$
$$B \to 42100000H$$
$$C \to 41400000H$$

Which is false

Q.

$S \to, \# T (S \cdot val = S_1 \cdot val \times T \cdot val)$

$S \to T (S \cdot val = T \cdot val)$

$T \to, \% R (T.val = T_1 \cdot val \div R \cdot val)$

$T \to R (T \cdot val = R \cdot val)$

$R \to id (R \cdot val = id \cdot val)$

$20 \# 10 \% 5 \# 8 \% 2 \% 2$

Q. ✓ $L_1 = ww \,/\, w \varepsilon\, (a, b)$

✓ $L_2 = a^n\, w\, a^n \,/\, w \varepsilon\, \{a, b\}^*,\ n > 0$

[MCQ]

A L_1 and L_2 both context free but not regular

B L_1 and L_2 both are regular

C L_1 and $_2$ both are CFL

D   None of these

Q.

$$y(x) = \begin{cases} 2 & 0 \le x \le \dfrac{1}{3} \\[2mm] 3 & \dfrac{1}{3} \le x \le \dfrac{3}{4} \\[2mm] 1 & \dfrac{3}{4} \le x \le 1 \end{cases}$$

Area = ?

Q. Consider following address www.gate.co.in what is number of DNS pairwise response to access the address?

[NAT - 1 Mark]

Q. The ___ is too high to be considered _____.

[MCQ]

A Fare/fare

B Fair/Fair

C Fare/fair

D Fair/Fare

Q. Given root equation
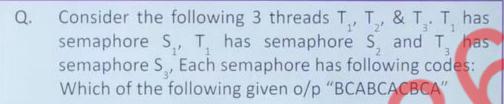$x^2 + 2x + 6 = 0$
Find the value of $(r + 2)(r + 3)(r + 4)(r + 5)$

[MCQ]

A -51

B +51

C -126

D +126

Q. Consider the following 3 threads T_1, T_2, & T_3. T_1 has semaphore S_1, T_1 has semaphore S_2 and T_3 has semaphore S_3, Each semaphore has following codes: Which of the following given o/p "BCABCACBCA"

[MCQ -2 Marks]

A $S_1=1$, $S_2=0$, $S_3=0$

B $S_1=1$, $S_2=1$, $S_3=1$

C $S_1=0$, $S_2=1$, $S_3=1$

D

Q. Which of the following given overflow. These are 4 bit register R_1 and R_2 and 2's complement number system is used and arithmetic addition $R_1 + R_2$

[MCQ - 1 Mark]

A $1001 \rightarrow R_1$
$1111 \rightarrow R_2$

B $1100 \rightarrow R_1$
$1010 \rightarrow R_2$

C 1011
1110

D 1011
1110