SECTION-A

Answer all questions. Each question carries one Mark $(5 \times 1 = 5M)$

Note: Write the answers in orderly at one place

1. $10.{}^{n}C_2 = 3.{}^{(n+1)}C_3$ then n=?

   A)3 B) 11 C) 9 D) 8

2. The number of ways in which 13 gold coins can be distributed among 3 persons such that each one gets at least two gold coins each.

   A)36 B)24 C)12 D)6

3. The term independent of x in the expansion of $(2x^2 - \frac{3}{x^3})^{15}$ is....

   A) ${}^{15}C_9 .2^8.3^7$ B) $-{}^{15}C_9 .2^{10}.3^5$ C) ${}^{15}C_9 .2^{15}$ D) ${}^{15}C_9 .2^9.3^6$

4. Observe the statements I and II

   I) The second term in $(1 + x^2)^{-n}$ is $-nx^2$.

   II) $n \in Z^+$, $2^{3n} - 7n - 1$ is divisible by 49^2.

   A) I & II are true B) I & II are true

   C) I is true & II is false D) I is false & II is true

5. Fair dice are rolled. The probability of sum of their faces are to be greater than or equals to10.

   A)1/5 B) 1/2 C)1/12 D)1/6

SECTION-B

Answer any two of the following questions. $(2 \times 5 = 10M)$

6. a) A class contains 4 boys and g girls. Every Sunday, 5 students with at least 3 boys go to a picnic. A different group is being sent every week. During the picnic the class teacher gives each girl in the group a doll. If the total number of dolls distributed is 85, find g.

   b) Resolve $\frac{x^2+5x+7}{(x-3)^3}$ into partial fractions.

7. a) Find the sum of $2.C_0+5.C_1+8.C_2+\ldots\ldots\ldots+(3n+2).C_n = (3n+4)2^{n-1}$.

   b) Find the coefficient of x^6 in the expansion of $(1 - 3x)^{\frac{-2}{5}}$.

8. a) Give two examples of events that are neither mutually exclusive nor exhaustive.

   b) Find the probability of drawing an Ace or a spade from a well shuffled pack of 52 cards.

End of the Question paper