

Followings are of 2 Marks each (Q01-05).

- Q01. An experiment consists of rolling a die and then tossing a coin once if the number on the die is even. If the number on the die is odd, the coin is tossed twice. Write the sample space for this experiment.
- Q02. A coin is tossed. If it shows a tail, we draw a ball from a box which contains 2 red and 3 black balls. If it shows head, we throw a die. Find the sample space for this experiment.
- Q03. A pair of die is thrown. Find the probability that the sum of the numbers appearing on them is even.
- Q04. Find the probability that in a random arrangement of the letters of the word UNIVERSITY, two I's come together.
- Q05. Let A and B be two events such that  $P(A) = 0.3$  and  $P(A \cup B) = 0.8$  then, determine  $P(B)$  and  $P(\bar{B})$  if  $P(A \cap B) = P(A) \cdot P(B)$ .  $[2 \times 5 = 10]$

Followings are of 3 Marks each (Q06-07).

- Q06. Out of 100 students, two sections of 40 and 60 are formed. If you and your friend are among the 100 students, what is the probability that you both enter the same section? What is the probability that you both enter the different sections?

OR

Find the probability that when a hand of 7 cards is drawn from a well shuffled deck of 52 cards, it contains (a) all Kings (b) at least 3 Kings (c) all Ace cards.

- Q07. Three coins are tossed once. Let A denote the event "three heads show", B denote the event "two heads and one tail show", C denote the event "three tails show" and D denote the event "a head shows on the first coin". Which events are (a) mutually exclusive? (b) simple? (c) compound?  $[3 \times 2 = 6]$

Following is of 4 Marks (Q08).

- Q08. **CASE STUDY :** In a class of 60 students, 30 opted for NCC, 32 opted for NSS and 24 opted for both NCC and NSS.



If one of these students is selected at random, find the probability that

(a) the student has opted neither NCC nor NSS.

(b) the student has opted NSS but not NCC.  $[2 \times 2 = 4]$

Followings are of 5 Marks each (Q09-10).

- Q09. Two students Anil and Ashima appeared in an examination. The probability that Anil will qualify the examination is 0.05 and that Ashima will qualify the examination is 0.10. The probability that both will qualify the examination is 0.02. Find the probability that
- (a) both Anil and Ashima will not qualify the examination.
- (b) at least one of them will not qualify the examination.
- (c) only one of them will qualify the examination.

- Q10. Three letters are dictated to three persons and an envelope is addressed to each of them, the letters are inserted into the envelopes at random so that each envelope contains exactly one letter. Find the probability that at least one letter is in its proper envelope. [5 × 2 = 10]

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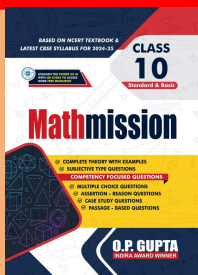
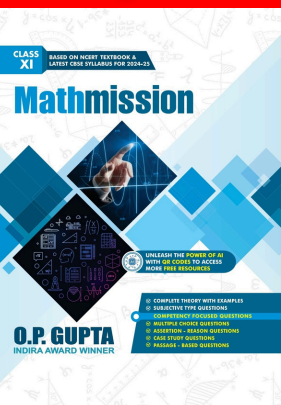
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