PROBABILITY

3

Marks	2	3	TotalMarks
No.of Questions	1(K)	1(K)	5

2 MARK QUESTIONS

(Knowledge)

1. If A and B are Mutually exclusive events with $P(A)=\frac{2}{5}, P(B)=\frac{1}{7}$, find $P(A \cup B)$.
2. If $P(A)=\frac{1}{2}, P(B)=\frac{1}{3}$ $P(A \cup B)=\frac{7}{12}$ find P(B/A).
3. If $P(\overline{A})=0.65$, $P(A \cup B)=0.65$. find P(B) if A and B are Mutually exclusive events.
4. An unbased die is rolled. Find the probability of (a) getting a multiple of 3, (b) getting a prime number.
5. Two cards are drawn at random from a well - shuffled pack of 52 cards, what is the probability that either both are Queens or both are king cards.
6. A die is thrown twice, what is the probability that atleast one of the two numbers is 6.
7. The probability of occurence if two events A and B are $\frac{1}{4}$ and $\frac{1}{2}$ respectively. The probability their simultaneous occurance is $\frac{7}{50}$. What is the probability that neither A nor B occurs?
8. Two coins are tossed simultaneously. What is the probability of getting (a) atmost 1 tail (b) atleast 1 tail.
9. Three fair coins are tossed simultaneously. Find the probability of getting atleast one head and alleast one tail.
10. Two dice are rolled simultaneously. Find the probabilityof getting a doublet of even numbers.
11. A box contains 5 defective and 15 non defective bulbs. Two bulbs are chosen at random. Find the probability that both the bulbs are non-defective.
12. A problem in a question paper is given to 3 students in a class to be solved. The probability of their solving the problem are 0.5, 0.7 and 0.8 respectively. Find the probability that the problem will be solved.
13. What is the probability that a randomly chosen two digit positive integer is a multiple of 3.
14. Two cards are drawn from a pack of 52 cards what is the probability that both are face cards.
15. Tickets are numbered from 1 to 18 are mixed up together and one ticket is drawn at random. what is the probability that the ticket has a number which is a multiple of 2 or 3.

16. If the letters of the word 'RAMLEELA' are arranged in random. What is the probability that it begins with REEL.
17. A committee of 4 has to be selected from 9 boys and 6 girls. What is the probability that the committee contains 2 boys and 2 girls.
18. If A and B are two events with probability 0.4 and 0.8 correponding to A and $A \cup B$. Find P(B) if A & B are mutually exclusive.
19. Three of the six vertices of a regular hexagon are chosen at random. What is the probability that the triagle formed with there 3 vertices is equilateral.

3 MARKS QUESTIONS

(Knowledge)

1. The probability that a doctor gets job in Army is $\frac{1}{2}$ and the probability that he will not get a job in Navy is $\frac{2}{5}$. If the probability of getting atleast one job is $\frac{3}{4}$. What is the probability that he will get both jobs.
2. A couple appears in an interview for two vacancies in the same post. The probability of husbands selection is $\frac{1}{7}$ and the probability of wife's selection is $\frac{1}{5}$. What is the probability that (a) Both of them will be selected, (b) only one of them will be selected.
3. Student A can solve 35% of the problems. Student B can solve 80% of the problems and student C can answer 50% of the problems. Find the probability that the problem is solved, if they try independently.
4. Two cards are drawn one after the other from a pack of 52 playing cards. Find the probability that they are both aces if the first cards is (a) Replaced, (b) not replaced.
5. A box contains 8 white chalks and 9 pink chalks. Two chalks are taken at random from the box. Find the probability that both of them are pink, if
   (a) the two chalks are taken out together.
   (b) the chalks are taken one after the other, without replacement.
   (c) the chalks are taken out one after the other, with replacement.
6. A box contains 4 defective and 6 non defective bulbs. Find the probability that atleast 3 bulbs are defective when 4 bulbs are selected at random.
7. A natural number is chosen at random among the first 300. What is the probability that the number so chosen is divisible by 3 or 5.
8. If three cards are drawn at random from a pack of 52 cards, find the probability that atleast two of them are kings.
9. If the letters of the word INDEPENDENCE are arranged at random. Find the probability that
   (a) 4 E's are together in the word

(b) The 2 D's are together and 3 N's are together.

(c) No two E's are together.

10. One card is drawn from a pack of 52 cards. Find the probability that

(a) Card is neither an ace or a king

(b) Card is either black or a jack.

(c) It is a face card.

11. From 8 gentlement and 7 ladies a committee of 5 is to be formed. What is the probability that this committee consists if (a) exactly 2 ladies (b) atleast 3 gentlemen.

12. Two persons A and B climb a hill. The probability that A climbs the hill is $\frac{1}{6}$ and that B climbs the hill is $\frac{1}{4}$. What is the probability that

(a) Both of them climb the hill

(b) Only one of them will climb the hill.

(c) None of them will climb the hill.

13. The probability that India win a Cricket match against Australia is $\frac{1}{3}$. If India and Australia play 3 tests what is the probability that

(a) India will win all the 3 matches.

(b) India will win atleast one match.

(c) India will win exactly two matches.

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