MCQPROBABILITY

MCQ 6.1
When the possible outcomes of an experiment are equally likely to occur, this we apply:
(a) Relative probability (b) Subjective probability
(c) Conditional probability **(d) Classical probability**

MCQ 6.2
A number between 0 and 1 that is use to measure uncertainty is called:
(a) Random variable (b) Trial (c) Simple event **(d) Probability**

MCQ 6.3
Probability lies between:
(a) -1 and +1 **(b) 0 and 1** (c) 0 and n (d) 0 and ∞

MCQ 6.4
Probability can be expressed as:
(a) Ration (b) Fraction (c) Percentage **(d) All of the above**

MCQ 6.5
The probability based on the concept of relative frequency is called:
(a) Empirical probability (b) Statistical probability **(c) Both (a) and (b)** (d) Neither (a) nor (b)

MCQ 6.6
The probability of an event cannot be:
(a) Equal to zero (b) Greater than zero (c) Equal to one **(d) Less than zero**

MCQ 6.7
A measure of the chance that an uncertain event will occur:
(a) An experiment (b) An event **(c) A probability** (d) A trial

MCQ 6.8
A graphical device used to list all possibilities of a sequence of outcomes in systematic way is called:
(a) Probability histogram (b) Venn diagram (c) Pie diagram **(d) Tree diagram**

MCQ 6.9
A random experiment contains:
(a) At least one outcome **(b) At least two outcomes**
(c) At most one outcome (d) At most two outcomes

MCQ 6.10
The probability of all possible outcomes of a random experiment is always equal to:
(a) One (b) Zero (c) Infinity (d) All of the above

MCQ 6.11
The outcome of tossing a coin is a:
(a) Mutually exclusive event (b) Compound event (c) Certain event **(d) Simple event**

MCQ 6.12
The result of no interest of an experiment is called:
(a) Constant (b) Event **(c) Failure** (d) Success

MCQ 6.13
A set of all possible outcomes of an experiment is called:
(a) Combination (b) Sample point **(c) Sample space** (d) Compound event

MCQ 6.14
The numbers of counting rules that are useful in determining the number of outcomes in an experiment are:
(a) One (d) Two **(c) Three** (d) Four

MCQ 6.15
The events having no experimental outcomes in common is called:
(a) Equally likely events (b) Exhaustive events
(c) Mutually exclusive events (d) Independent events

MCQ 6.16
A set of outcomes formed after some additional information is called:
(a) Sample space **(b) Reduced sample space** (c) Null set (d) Random experiment

MCQ 6.17
The probability associated with the reduced sample space is called:
(a) Conditional probability (b) Statistical probability
(c) Mathematical probability (d) Subjective probability

MCQ 6.18
An arrangement of objects without regard to order is called:
(a) Permutation **(b) Combination** (c) Random experiment (d) Sample point

MCQ 6.19
The number of permutations of a set of n things, taken r at a time with n 2 r given by:
$(\boldsymbol{a})\ \frac{\boldsymbol{n}!}{(\boldsymbol{n}-\boldsymbol{r})!}$ $(b)\ \frac{n!}{(r-n)!}$ $(c)\ \frac{n!}{r!\,(n-r)!}$ $(d)\ \frac{n!}{r!}$

MCQ 6.20
If three candidates are selected to attend a course from the ten candidates, the number of ways of selecting the candidates is an example of:
(a) Combination (b) Permutation (c) Reduced sample space (d) Both (a) and (b)

MCQ 6.21
When each outcome of a sample space is as likely to occur as any other, the outcomes are called:
(a) Exhaustive (b) Mutually exclusive **(c) Equally likely** (d) Not mutually exclusive

MCQ 6.22
If A is any event in S and $\bar{A}$ its complement, then P($\bar{A}$) is equal to:
(a) 1 (b) 0 (c) 1- A **(d) 1 - P(A)**

MCQ 6.23
When certainty is involved in a situation, its probability is equal to:
(a) Zero (b) Between -l and + 1 (c) Between 0 and 1 **(d) One**

MCQ 6.24
Which of the following cannot be taken as probability of an event?
(a) 0 (b) 0.5 (c) 1 **(d) -1**

MCQ 6.25
If an event contains more than one sample points, it is called a:
(a) Simple event **(b) Compound event** (c) Impossible event (d) Certain event

MCQ 6.26
When the occurrence of one event has no effect on the probability of the occurrence of another event, the events are called:
(a) Independent (b) Dependent (c) Mutually exclusive (d) Equally likely

MCQ 6.27
A particular result of an experiment is called:
(a) Trial (b) Simple event (c) Compound event **(d) Outcome**

MCQ 6.28
A collection of one or more outcomes of an experiment is called:
(a) Event (b) Outcome (c) Sample point (d) None of the above

MCQ 6.29
A process that leads to the occurrence of one and only one of several possible observations is called:
(a) Random experiment (c) Random variable **(c) Experiment** (d) Probability distribution

MCQ 6.30
Which statement is false?
(a) The classical definition applies when there are n equally likely outcomes to an experiment
(b) The empirical definition occurs when number of times an event happen is divided by the number of observations.
(c) A subjective probability is based on whatever information is available
(d) The general rule of addition is used when the events are mutually exclusive

MCQ 6.31
The term 'sample space' is used for:
(a) All possible outcomes (b) All possible coins (c) Probability (d) Sample

MCQ 6.32
The term 'event' is used for:
(a) Time **(b) A sub-set of the sample space**
(c) Probability (d) Total number of outcomes.

MCQ 6.33
The six faces of the die are called equally likely if the die is:
(a) Small **(b) Fair** (c) Six-faced (d) Round

MCQ 6.34
If we toss a coin and P(H) = 2P(T), then probability of head is equal to:
(a) 0 (b) 1/2 (c) 1/3 **(d) 2/3**

MCQ 6.35
A letter is chosen at random from the word "Statistics". The probability of getting a vowel is:
(a) 1/10 (b) 2/10 **(c) 3/10** (d) 4/10

MCQ 6.36
An arrangement in which the order of the objects selected from a specific pool of objects is important called:
(a) Combination **(b) Permutation** (c) Factorial (d) Sample space

MCQ 6.37
Two books are to be selected at random without replacement out of four books. Then number of possible selections are:
(a) 4 (b) 2 **(c) 6** (d) 3

MCQ 6.38
Three books of different colours are to be arranged in a book-shelf. The possible arrangements are:
(a) 3 (b) 1 **(c) 6** (d) 2

MCQ 6.39
If a sample S = {1, 2}, the number of all possible sub-sets are:
(a) 2 (b) 1 (c) 3 **(d) 4**

MCQ 6.40
When a die and a coin are rolled together, all possible outcomes are:
(a) 6 (b) 2 (c) 36 **(d) 12**

MCQ 6.41
When two coins are tossed, the possible outcomes are:
(a) 2 **(b) 4** (c) 1 (d) None of them

MCQ 6.42
If three coins are tossed, the possible outcomes are:
(a) 8 (b) 3 (c) 1 (d) None of them

MCQ 6.43
If **n** coins are tossed, the possible outcomes are:
(a) n (b) 2 **(c) 2^n** (d) All of them

MCQ 6.44
If two dice are roiled, the possible outcomes are:
(a) 6 **(b) 36** (c) 1 (d) Difficult to answer

MCQ 6.45
When **n** dice are rolled, the possible outcomes are:
(a) 6^n (b) 6 (c) 1 (d) 18

MCQ 6.46
When one card is selected at random from a pack of 52 playing cards, the possible selections are:
(a) 104 **(b) 52** (c) 520 (d) 2704

MCQ 6.47
Two cards are selected at random with replacement from a pack of 52 playing cards. The possible outcomes are:
(a) 52 x 52 (b) 52 (c) 1326 (d) 2

MCQ 6.48
A bag contains 4 white and 2 black balls of the same size and weight, and two balls are selected at random without replacement, the possible selections are:
(a) 6 (b) 4 (c) 36 **(d) 15**

MCQ 6.49
Two balls are selected at random with replacement from a bag containing 3 red, 3 black and 2 green balls. The possible outcomes are:
(a) 8 **(b) 64** (c) 16 (d) 2

MCQ 6.50
Five cards are selected at random from a pack of 52 cards with replacement. The possible combinations are:
(a) 52 **(b) $(52)^5$** (c) 52 x 52 (d) $(5)^{52}$

MCQ 6.51
The digits 1, 2, 3, 4, 5 are the roll numbers of 5 students. These roll numbers are written on the paper slips and two paper slips are selected at random without replacement. The possible combinations are:
(a) 5 (b) 2 (c) 25 **(d) 10**

MCQ 6.52
Which is the impossible event when a die is rolled:
(a) 2 or 3 (b) 5 or 6 (c) 1 **(d) 0 or 7**

MCQ 6.53
The probability of drawing any one spade card is:
(a) 1/13 **(b) 1/4** (c) 4/13 (d) 1/52

MCQ 6.54
A balance die is rolled, the probability of getting an odd number is:
(a) 1/2 (b) 1/4 (c) 1/6 (d) 1/36

MCQ 6.55
Two fair dice are rolled. The probability of throwing an odd sum is:
(a) 1 **(b) 1/2** (c) 1/6 (d) 1/36

MCQ 6.56
Given P(A) = 0.4, P(B) = 0.5 and P(A∪B)=0.9,then:
(a) A and B are not mutually exclusive events (b) A and B are equally likely events
(c) A and Bare independent events **(d) A and B are mutually exclusive events**

MCQ 6.57
If P(B/A) = 0.50 and P(A∩B) = 0.40, then p(A) will be equal to:
(a) 0.40 (b) 0.50 **(c) 0.80** (d) 1

MCQ 6.58
Which of the following statements is incorrect:
$(a)\ \ A-(B\cup C)=(A-B)\cap(A-C)$ $(b)\ \left(\overline{A\cup B}\right)=\bar{A}\cap\bar{B}$
$(c)\ \ \left(\overline{A\cap B}\right)=\bar{A}\cup\bar{B}$ $(\boldsymbol{d})\ \boldsymbol{A-(B\cap C)=(A+B)\cup(A-C)}$

MCQ 6.59
If P(A/B) = P(A) and P(B/A)=P(B), then A and B are:
(a) Mutually exclusive (b) Dependent (c) Equally likely **(d) Independent**

MCQ 6.60
A fair coin is tossed 100 times, the expected number of heads is:
(a) 100 **(b) 50** (c) 30 (d) 60

MCQ 6.61
When two dice are rolled, the maximum total on the two faces of the dice will be:
(a) 6 (b) 36 **(c) 12** (d) 2

MCQ 6.62
A random sample of 200 random digits is selected from a random number table. Expected number of zeros in the sample is:
(a) Zero (b) 10 **(c) 20** (d) 5

MCQ 6.63
Six digits are selected at random again and again from a random number table and the even digits are counted each time. In most of the cases, the number of even digits will be:
(a) 2 **(b) 3** (c) 4 (d) 6

MCQ 6.64
Two events A and B are called mutually exclusive if:
(a) $A \cup B = \Phi$ **(b) $A \cap B = \Phi$** (c) $A \cap B = S$ (d) $A \cap B = 1$

MCQ 6.65
If A and B are two mutually exclusive events, then:
(a) $P(A \cap B) = 0$ (b) $P(A \cap B) = 1$ (c) $P(A \cup B) = 0$ (d) $P(A \cap B) = S$

MCQ 6.66
When A and B are two non-empty and mutually exclusive events, then:
(a) $P(A \cup B) = P(A).P(B)$ **(b) $P(A \cup B) = P(A) + P(B)$**
(c) $P(A \cap B) = P(A).P(B)$ (d) $P(A \cap B) = P(A)+P(B)$

MCQ 6.67
The two events A and B are called not mutually exclusive events if:
(a) $A \cap B = \Phi$ **(b) $A \cap B \neq \Phi$** (c) $A \cup B = \Phi$ (d) $A \cap B$ = zero

MCQ 6.68
If A and B are disjoint events then the statement which is always true is:
(a) P(A/B) = 0 (b) $P(A \cup B) = 0$ (c) $P(A \cap B) = 1$ (d) P(A) = P(B)

MCQ 6.69
The events A, B and C are called exhaustive events if:
(a) $A \cup B \cup C = S$ (b) $A \cap B \cap C = S$ (c) $A \cup B \cup C = \Phi$ (d) $A \cup B \cup C$ = Zero

MCQ 6.70
If A and B are not-mutually exclusive events, then:
(a) $P(A \cup B) + P(A \cap B) = P(A) + P(B)$ (b) $P(A \cup B) = P(A) + P(B)$
(c) $P(A \cup B) = P(A).P(B)$ (d) $P(A \cap B) = P(A) + P(B)$

MCQ 6.71
If an event $\bar{A}$ is the complement of the event A, then:
(a) $A \cup \bar{A} = S$ (b) $A \cap \bar{A} = S$ (c) $A \cup \bar{A} = \Phi$ (d) $P(A) = P(\bar{A})$

MCQ 6.72
If $A_1, A_2, A_3, ..., A_k$ are k mutually exclusive events, then:
(a) $P(A_1 \cup A_2 \cup A_3 \cup ... \cup A_k) = P(A_1)+P(A_2)+P(A_3)+...+ P(A_k)$
(b) $P(A_1 \cup A_2 \cup A_3 \cup ... \cup A_k) > 1$
(c) $P(A_1 \cap A_2 \cap A_3 \cap ... \cap A_k) = 1$
(d) $P(A_1 \cap A_2 \cap A_3 \cap ... \cap A_k) = P(A_1 \cup A_2 \cup A_3 \cup ... \cup A_k)$

MCQ 6.73
If A is an empty set and B is a non-empty set then:
(a) $A \cap B = S$ (b) $A \cap B = B$ **(c) $A \cup B = B$** (d) P(A) = P(B)

MCQ 6.74
If A is an empty set and S is the sample space then:
(a) P(A∪S) = P(S) (b) P(A∪S) = P(Φ) (c) P(A∩S) = 1 (d) P(A∪S) = Zero

MCQ 6.75
If A and B are independent events, then:
(a) P(A∪B) = P(A).P(B) **(b) P(A∩B) = P(A).P(B)**
(c) P(A∩B) = P(A)+P(B) (d) P(A) = P(B)

MCQ 6.76
If A and B are two independent events, then:
(a) P(A/B) = P(A) (b) P(A) = P(B) (c) P(A) < P(B) (d) P(A/B) = P(B/A)

MCQ 6.77
A and B are two independent events. Which one of these equations is false?
(a) $P(A \cap \bar{B}) = P(A)P(\bar{B})$ (b) $P(\bar{A} \cap \bar{B}) = P(\bar{B} \cap \bar{A})$
(c) $P(\bar{A} \cap \bar{B}) = P(\bar{A})P(\bar{B})$ **(d) P(A∪B) = P(A)P(B)**

MCQ 6.78
The conditional probability of the event A when event B has occurred is denoted by:
(a) P(A + B) (b) P(A - B) **(c) P(A/B)** (d) $P(\bar{A})$

MCQ 6.79
If A and B are any two events, then $P(A/B)+P(\bar{A}/B)$ is equal to:
(a) 0 (b) 0.25 (c) 0.5 **(d) 1**

MCQ 6.80
If A is an arbitrary event, then P(A/A) is equal to :
(a) Zero **(b) One** (c) Infinity (d) Less than one

MCQ 6.81
If A and B are any two events, then $P(\bar{A}/B)$ is equal to:
(a) P(A/B) **(b) 1- P(A/B)** (c) 1+ P(A/B) (d) $P(\bar{A} \cap B)$

MCQ 6.82
If A and B are any two events, then $P(A \cup \bar{B})$:
(a) 1+P(A∩B) (b) 1-P(A∪B) **(c) 1- P(A∩B)** (d) P(A)+P(B)

MCQ 6.83
If A and B are any two events, then $P(\bar{A} \cap \bar{B})$:
(a) 1-P(A∪B) (b) 1-P(A∩B) (c) $1-P(\bar{A} \cap B)$ (d) $1-P(A \cap \bar{B})$

MCQ 6.84
Which of the following statements is correct?
$(\boldsymbol{a})\ \boldsymbol{A} \cap (\boldsymbol{B} \cup \boldsymbol{C}) = (\boldsymbol{A} \cap \boldsymbol{B}) \cup (\boldsymbol{A} \cap \boldsymbol{C})$ $(b)\ A \cup (B \cap C) = (A \cap B) \cap (A \cup C)$
$(c)\ A \cap (B \cap C) = (A \cup B) \cup (B \cap C)$ $(d)\ A \cap (B \cup C) = A + (B \cap C)$

MCQ 6.85
If A and B are two mutually exclusive and exhaustive events and P(A)=2P(B), then P(B) is equal to:
(a) 1/2 (b) 2/3 **(c) 1/3** (d) 1/4

MCQ 6.86
Two coins are tossed. Probability of getting head on the first coin is:
(a) 2/4 (a) 1 (c) Zero (d) 4

MCQ 6.87
A die and a coin are tossed together. Probability of getting head on the coin is:
(a) 6/12 (b) 6 (c) 12 (d) Zero

MCQ 6.88
A fair die is rolled. Probability of getting even face given that face is less than 5 is given by:
(a) 1/2 (b) 5 (c) 2 (d) 6

MCQ 6.89
Two coins are tossed. The probability that both faces will be matching given by:
(a) 1/4 **(b) 1/2** (c) 1 (d) Zero

MCQ 6.90
Two coins are tossed. Probability of getting two heads given that there is at least one head is given by:
(a) 1/2 **(b) 1/3** (c) 1/4 (d) 2/3

MCQ 6.91
A fair die is rolled. Probability of getting more than4 or less than 3 is given by:
(a) 2/3 (b) 1/3 (c) 1/2 (d) 4/3

MCQ 6.92
74. A fair die is rolled. Probability of getting even face or face more than 4 is:
(a) 1/3 **(b) 2/3** (c) 1/2 (d) 5/6

MCQ 6.93
Two dice are rolled. Probability of getting similar faces is:
(a) 5/36 **(b) 1/6** (c) 1/3 (d) 1/2

MCQ 6.94
Two dice are rolled. Probability of getting total less than 4 or total more than 10 is given by:
(a) 10/36 (c) 4/36 **(c) 1/36** (d) 14/36

MCQ 6.95
Two dice are rolled. Probability of getting a total of 4 given that both-faces are similar is:
(a) 5/36 (b) 1/36 (c) 4/36 **(d) 1/6**

MCQ 6.96
If A and B are two not-independent events, then the probability that both A and B will happen together is:
(a) P(A∩B) = P(A)P(B/A) (b) P(A∩B) = P(A)P(B)
(c) P(A∩B) = P(A)+P(B) (d) P(A∩B) = P(A)

MCQ 6.97
If A and B are two dependent events, then:
(a) P(A) P(B/A) = P(B)P(A/B) (b) P(A/B) = P(B/A)
(c) P(A/B) = P(A) (d) P(A) = P(B)

MCQ 6.98
Which one is true?
$(a)\ P(A \cap \bar{B}) = P(B) - P(A \cup B)$ $(\boldsymbol{b})\ \boldsymbol{P(A \cap \bar{B}) = P(A) - P(A \cap B)}$
$(c)\ P(A \cap \bar{B}) = P(B) - P(A \cap B)$ $(d)\ P(A \cap \bar{B}) = P(A) + P(\bar{B})$

MCQ 6.99

$Given\ P(A \cap B) = \frac{3}{5}, then\ P(\bar{A} \cup \bar{B})\ is$:

(a) 1/5 **(b) 2/5** (c) 3/5 (d) 1

MCQ 6.100

$Given\ P(\bar{A} \cap \bar{B}) = \frac{3}{5}, then\ P(\bar{A} \cup \bar{B})\ is$:

(a) 7/10 (b) 1/10 (c) 3/10 (d) 1

MCQ 6.101

Given P(A)=2/3, P(B)=3/8 and PAB)=1/4, then A and B are:

(a) Independent (b) Dependent (c) Mutually exclusive (d) Equally likely