Pre Board MT -06

INFINITY THINK BEYOND..... AN EDUCATIONAL INSTITUTE

10 th

Syllabus: Mock Test 06 : Ch – Probability & Statistics

Time: 90 min **Maximum marks :40**

INSTRUCTIONS TO THE STUDENTS

1 . Read each question carefully .
2. Mark of each question is mention in front of question .
3. Attempt one question in internal choice based question .
4. Use of calculators is not allowed.
5. No negative marking .

SECTION A

(Questions 1 – 10 carry 1 marks)

1 If the mean of the observations x, x + 3, x + 5, x + 7 and x + 10 is 9, then the mean of the last three observations is **1**

(a) $10\frac{1}{3}$ (b) $10\frac{2}{3}$ (c) $11\frac{1}{3}$ (d) $11\frac{2}{3}$

2 For the following distribution **1**

Marks	No. Of Students
Below 10	3
Below 20	12
Below 30	27
Below 40	57
Below 50	75
Below 60	80

The modal class is

(a) 10-20 (b) 20-30 (c) 30-40 (d) 50-60

3 The mean and mode of a frequency distribution are 28 and 16 respectively. The median is **1**

(a) 22 (b) 23.5 (c) 24 (d) 24.5

4 The mean of 15 numbers is 25. If each number is multiplied by 4, mean of the new numbers is **1**

(a) 60 (b) 100 (c) 10 (d) none of these

5 Two unbiased coins are tossed then the probability of getting no heads is $\frac{m}{n}$, then $(m+n)^2$ is **1**

(a) 1 (b) 4 (c) 5 (d) 25

6 If three coins are tossed together, then the probability of getting two head is **1**

(a) $\frac{1}{8}$ (b) $\frac{3}{8}$ (c) $\frac{5}{8}$ (d) None of these

7 Two dice are thrown together, the probability that sum of the two numbers will be a multiple of 4 is **1**

(a) 1/2 (b) 1/3 (c) 1/8 (d)1/4

8 A man is known to speak truth 3 out of 4 times. He throws a die and a number other than six comes up, then the probability that he reports it is a six is **1**

(a) 3/4 (b)1/4 (c)/2 (d) 1

9 Two statements are given, one labelled Assertion (A) and the other labelled Reason(R) Select the correct answer from the options (A), (B), (C) and (D) as given below . **1**

(a)Both A and R are true and R is the correct explanation for A.
(b) Both A and R are true and R is not the correct explanation for A.
(c) A is true but R is false.
(d) A is false but R is true

Assertion: If a die is thrown, the probability of getting a number less than 3 and greater than 2 is zero.
Reason: Probability of an impossible event is zero

10 Two statements are given, one labelled Assertion (A) and the other labelled Reason(R) Select the correct answer from the options (A), (B), (C) and (D) as given below . **1**

(a)Both A and R are true and R is the correct explanation for A.
(b) Both A and R are true and R is not the correct explanation for A.
(c) A is true but R is false.
(d) A is false but R is true

Assertion (A): Mean of first n natural number is $\frac{n(n+1)}{2}$

Reason (R): Mean ($\bar{x}$) = $\frac{\sum fixi}{\sum fi}$, where $x_i = \frac{1}{2}$ (lower limit +upper limit) of i^{th} class interval and f_i is its frequency.

SECTION B

(Questions 11 – 13 carry 2 marks)

11 If a number is chosen at random from the numbers -3, -2, -1, 0, 1, 2, 3. What is the probability that $x^2 < 4$? **2**

12 Find the median of the following data: **2**

Height (in cm)	Less than 120	Less than 140	Less than 160	Less than 180	Less than 200
No. Of Students	12	26	34	40	50

13 The mode of a grouped frequencydistribution is 75 and the model is 65-80. The frequency of the class preceeding the model class is 6 and the frequency of the class succeeding the model class is 8.Find the frequency of the modal class. **2**

SECTION C

(Questions 14 – 15 carry 3 marks)

14 Two different dice are thrown together. Find the probability that **3**
(i) the sum of the numbers appeared is less than 7.
(ii) the product of the numbers appeared is less than 18

OR

All face cards of spades are removed from a pack of 52 playing cards and the remaining pack is shuffled well. A card is then drawn at random from the remaining pack. Find the probability of getting:
(a) a face card
(b) an ace or a jack

15 Find the value of p , if mean of the following distribution is 20. **3**

x	15	17	19	20+p	23
f	2	3	4	5	6

SECTION D

(Questions 16 – 17 carry 5 marks)

16 Find the values of frequencies x and y in the following frequency distribution table if N = 100 and median is 32 **5**

Mark	0-10	10-20	20-30	30-40	40-50	50-60
No. Of Students	10	x	25	30	y	10

17 The king, the jack and the 10 of spades are lost from a pack of 52 cards and a card is drawn from the remaining cards after shuffling. Find the probability of getting a **5**
(i)red card
(ii)black jack
(iii)red king
(iv) 10 of hearts

SECTION E

(Questions 18 – 19 carry 4 marks)

18 Rahul and Ravi planned business (board game) in which they were supposed to use two dice. **4**

(i)Ravi got first chance to roll the dice . What is the probability that he got the sum of the two numbers appearing on the top face of the dice is 8 ?

(ii)Rahul got next chance . What is the probability that he got the sum of appearing on the top face of the dice is 13?

(iii) Now its Ravi's turn. He rolled the dice . What is the probability that that he got the sum of the two numbers appearing on the top face of the dice is less than or equal to 12?

OR

(b)Rahul got next chance . What is the probability that that he got the sum of the two numbers appearing on the top face of the dice is at most 7 ?

9 BINGO is game of chance . The host has 75 balls numbered 1 through 75 . Each player has a BINGO card with some numbers written on it. The participant cancels the number of the card when called out a number written on the ball selected at random. Who so ever cancels all the numbers on his/her card , say BINGO and wins the game **4**

The table given below. Shows the data of the one such game where 48 balls were used before Tara said 'BINGO'

Numbers announced	Number of times
0-15	8
15-30	9
30-45	10
45-60	12
60-75	9

Based on the above information answer the following :

(i)Write the median class

(ii)When first ball was picked up , what was the probability of calling out an even number ?

(iii)Find median of the given data

(iv) Find the mode of the given data .