| Success Key Test Series$\square$ | SUCCESS KEY TEST SERIES <br> X (English) <br> (Worksheet -2 Math-1 Ch 5,6) <br> Mathematics Part - I- | DATE: |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | TIME: 1 hrs |  |  |  |
|  |  | MARKS: 20 |  |  |  |
|  |  |  |  |  |  |

Q. 1 (A) Choose the correct alternative.

1) Consider the following frequency median is

| Class | $0-5$ | $6-11$ | $12-17$ | $18-23$ | $24-29$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 13 | 10 | 15 | 8 | 11 |

The upper limit of the median class is
a. 17
b. 17.5
c. 18
d. 18.5
2) If $\mathrm{n}(\mathrm{A})=2, \mathrm{P}(\mathrm{A})=\frac{1}{5}$, then $\mathrm{n}(\mathrm{S})=$ ?
a. 10
b. $\frac{5}{2}$
c. $\frac{2}{5}$
d. $\frac{1}{3}$
B) Solve the following questions. (Any one)

1) How many possibilities are there in each of the following?

Any day of a week is to be selected randomly.
2) Given below is the frequency distribution of marks scored by the students:

| Marks | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of students | 3 | 10 | 20 | 5 | 2 |

Calculate mean marks scored by a student by using 'Direct Method'.
Q. 2 A) Complete the following Activities. (Any two)

1) The following table shows the blood-groups of employees in a bank.

Event $C$ is : 'the blood-group of an employee is $A B$.'

| Blood - group | A | B | AB | O |
| :--- | :---: | :---: | :---: | :---: |
| No. of employees | 20 | 40 | 15 | 25 |

If an employee is chosen at random, what is the probability that his blood - group is $A B$ ?
Fill in the following boxes and find the answer.
$\mathrm{n}(\mathrm{S}) 20+40+15+25=$ $\qquad$
$\mathrm{n}(\mathrm{C})=$ $\qquad$
$P(C)=\frac{n(C)}{n(P)}=$ $\qquad$ $=$ $\qquad$
2) The six faces of a die are marked as A, B, C, D, E, O

The event M is getting a vowel on the upper face of the die when it is tossed. Complete the following activity and find the probability of the event.

$$
\left.\begin{array}{rl}
\mathrm{S} & =\{ \\
\mathrm{n}(\mathrm{~s}) & =6
\end{array}\right\}
$$

$$
\begin{aligned}
\mathrm{M} & =\{ \\
\mathrm{n}(\mathrm{M}) & =3 \\
\mathrm{P}(\mathrm{M}) & =\frac{\mathrm{n}(\mathrm{M})}{\mathrm{n}(\mathrm{~S})}=
\end{aligned}
$$

$\qquad$ $=$ $\qquad$
3) The maximum bowling speed $(\mathrm{km} / \mathrm{h})$ of 33 players at a cricket coaching centre is given in the following table. Find the modal bowling speed of a player.

| Bowling speed (km/h) | Number of players frequency (c.f) |
| :---: | :---: |
| $85-10$ | 9 |
| $100-115$ | 11 |
| $115-130$ | 8 |
| $130-145$ | 5 |

Here, $L=100, f_{m}=11, f_{1}=9, f_{2}=8, h=15$.
Mode

$$
\begin{aligned}
& = \\
& =100+\left[\frac{11-9}{2(11)-9-8}\right] \times 15 \\
& =100+\square \times 15 \\
& =100+\square \\
& =100+6=
\end{aligned}
$$

... ( Formula)
... (Substituting the values)

The modal bowling speed of a player is $\qquad$ km/h.
B) Solve the following questions. (Any one)

1) Find the mean of the data given in the following table.

| Class | $0-20$ | $20-40$ | $40-60$ | $60-80$ | $80-100$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Frequency | 6 | 4 | 5 | 7 | 3 |

2) There are 15 tickets in a box, each bearing one of the numbers from 1 to 15 . One ticket is drawn at random from the box. Find the probability of event that the ticket drawn - (1) shows an even number. (2) shows a number which is a multiple of 5 .

## Q. 3 Solve the following questions. (Any one)

1) The following table shows the weight (in kg ) of 100 persons. Find the modal weight of a person.

| Weight (in kg) | $40-45$ | $45-50$ | $50-55$ | $55-60$ | $60-65$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of persons | 12 | 24 | 40 | 16 | 8 |

2) A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random to give it to Pranali. What is the probability of the event that Pranali gets,
(1) a red balloon
(2) a blue balloon
(3) a green balloon.
Q. 4 Solve the following questions. (Any one)
3) The following table shows the percentages of demands for different fruits registered with a fruit vendor. Show the information by a pie diagram.

| Fruits | Mango | Sweet lime | Apples | Cheeku | Oranges |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Percentages of demand | 30 | 15 | 25 | 20 | 10 |

2) A bag contains 2 red, 3 black and 4 green balls of the same size. A ball is drawn at random from the bag. Find the probability for the following events :
i. Event A : Ball drawn is not red.
ii. Event B : Ball drawn is not black.
iii. Event C : Ball drawn is not green.

## Q. 5 Solve the following questions. (Any one)

1) If two dice are rolled simultaneously, find the probability of the following events.
(1) The sum of the digits on the upper faces is at least 10.
(2) The sum of the digits on the upper faces is 33 .
(3) The digit on the first die is greater than the digit on second die.
2) The following table shows the number of students and the time they utilized daily for their studies. Find the mean time spent by students for their studies by direct method.

| Time (hrs,) | $0-2$ | $2-4$ | $4-6$ | $6-8$ | $8-10$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No. of students | 7 | 18 | 12 | 10 | 3 |

