

10th CLASS MARCH – 2020

MATHS - II

Time : 2.45 Hours]

[Max. Marks : 50

Section-I

Note : 1. Answer all the questions in one word or phrase.

12 x ½ = 6 M

2. Each question carries ½ mark.
1. Find the mean of the data –5,3,0,4,8?
2. What is the slope of y-axis?
3. If $\Delta ABC \sim \Delta DEF$, $\angle A + \angle C = 100^\circ$, then $\angle E = ?$
4. If $P(E) = 0.05$ then find $P(\bar{E})$?
5. Find the value of $A + B$ if $\tan A = \cot B$?
6. What is the angle in minor segment?
7. What is the probability of getting 53 Sundays in a leap year?
8. What is the meeting point of lines $y = -4$ and y-axis?
9. What is the x-coordinate of meeting point of L.C.F and G.C.F curves?
10. What is the probability of getting spade card of hearts, if card chosen randomly from pack suit?
11. What is the point of concurrence of the perpendicular bisectors of sides of a triangle?
12. What do we call the parallelogram circumscribing a circle?

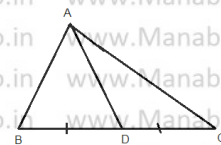
Section-II

Note : 1. Answer all the questions.

2. Each question carries 1 mark.

8 x 1 = 8 M

13. If a square has its side 7 cm then what is the length of its diagonal?
14. If $\sin(90 - A) = \frac{1}{2}$ then what is the value of A?
15. If area of triangle ABD = 12 cm² then what is the area of ΔABC if AD is its median?
16. Find the distance between two points (1, -2), (-3, 2)?
17. What are the measures of central tendency?
18. If a die is thrown once then what is the probability of getting even prime number?
19. Define angle of elevation?
20. What are the conditions required for two polygons become similar?



Section-III

Note : 1. Answer all the questions.

2. Each question carries 2 marks.

8 x 2 = 16 M

21. $\Delta ABC \sim \Delta PQR$ and their areas are respectively 64 cm² and 121 cm². If EF = 15.4 cm, then find BC?
22. Find the area of sector having angle 90° and radius 7 cm?
23. If mean and median of data are respectively 70.5 and 71.4 then, find mode?
24. What is the probability of two friends having the
 - i) Same birthday
 - ii) different birthday in non-leap year?

25. Find the value of 'k', if the given points are (k, 1), (-2, 0), (1, 2) are collinear?

26. If $\tan 2A = \cot (A - 27)$, where $2A$ is acute angle find the value of A .

27. State the Thale's theorem?

28. Define sure event? Write one example for it.

Section-IV

Note : 1. Answer all the questions.

2. Each question carries 4 marks.

3. There is an internal choice for each question

5 x 4 = 20 M

29. a) Show that the given points (1, 7), (4, 2), (-1, -1) and (-4, +4) are the vertices of square.

(OR)

b) A chord of circle of radius 10 cm subtends a right angle at the centre. Find the area of the corresponding

i) Minor segment

ii) Major segment. ($\pi = 3.14$)

30. a) If $\sec \theta + \tan \theta = P$, then show that $\sin \theta = \frac{P^2 - 1}{P^2 + 1}$

(OR)

b) BL and CM are medians of a triangle ABC right angle at A
prove that $4(BL^2 + CM^2) = 5BC^2$

31. a) From a deck of 52 playing cards club cards of King, Ace and 10 were removed and remaining cards were well shuffled. If a card is drawn at random then find the probability of

i) club ii) Ace iii) Diamond king iv) Club 5

(OR)

b) Construct a ΔPQR , if $PQ = 5.5\text{cm}$, $\angle Q = 60^\circ$, $\angle P = 70^\circ$. Then draw another triangle, whose sides are $\frac{2}{3}$ times of the corresponding sides of ΔPQR ?

32. a) Construct two tangents to a circle of radius 6 cm from a point lie out side to it at a distance 10cm?

(OR)

b) Find the trisection points of the line segment joined by the points (-3, 3) and (3, -3)

33. a) If the median of 60 observations given below is 28.5, then find the value of x and y?

Class interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Frequency	5	x	20	15	Y	5

(OR)

b) An observer is flying in an aeroplane which is at a height of 900 m from the ground and observer two ships which are in the same direction at an angles of depression 60° and 30° respectively. Find the distance between the two ships?

