संकलित परीक्षा – II (2015-2016)

SUMMATIVE ASSESSMENT – II
MATHEMATICS   Class – IX

TEHVJU6

Time allowed : 3 hours

Maximum Marks : 90

Question numbers **1** to **4** carry **one** mark each.   **SECTION-A**

1. A triangle and rectangle lie on the same base and between the same parallels. If area of rectangle is 16 cm^2, find the area of triangle.   1

2. Calculate the surface area of a hemispherical dome of a temple with radius 14 m to be white washed from outside.   1

3. Mean of 20 observations is 17. If 25 is added to the sum of observations, find the new sum of the observations.   1

4. If the median of the observations : $x, x+3, x+5, x+7, x+10$ is 9, find the fourth observation.   1

Question numbers **5** to **10** carry **two** marks each.   **SECTION-B**

5. In the given figure, AB and CD are two equal chords of a circle with centre O. OP and OQ are perpendiculars on chords AB and CD respectively. If $\angle POQ = 120°$, find $\angle APQ$.   2
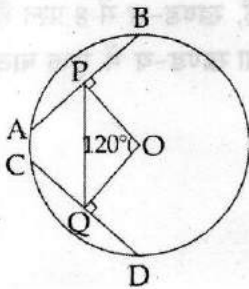
6. Is it possible to construct a triangle of given sides as 44 mm, 9.5 cm and 46 mm. Justify your answer.   2

7. Perimeter of a $\triangle ABC$ is 72 cm. Find the perimeter of the triangle DEF with verticies D, E and F as the mid–points of the sides of the given triangle.   2

8. Find the number of cubes of side 2 cm that can be cut from a cuboid of dimensions 5 cm $\times$ 4 cm $\times$ 2 cm.   2

9. The probability of guessing the correct answer to a certain question is $\dfrac{x}{2}$. If the probability of not guessing the correct answer is $\dfrac{3x}{2}$, then find the value of x.   2

10. In an experiment, a coin is tossed 600 times. If the tail turns up 380 times, find the experimental probability of getting.   (a)   A head   (b)   A tail   2

Question numbers **11** to **18** carry **three** marks each.   **SECTION-C**

11. Nine persons went to a hotel for taking their meals. Eight of them spent ₹ 120 on their meal and ninth spent ₹ 80 more than the average expenditure of all the nine. What was the total money spent by them.   3

12. Draw the frequency polygon to represent the given data :   3

Class Interval	Frequency
10 - 15	450
15 - 20	400
20 - 25	850
25 - 30	900
30 - 35	600
35 - 40	455
40 - 45	220
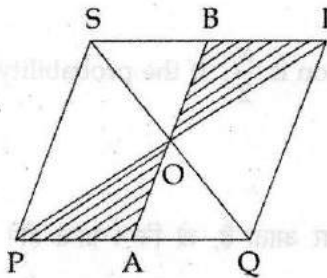
13. PQRS is a parallelogram whose diagonals meet at O.   3
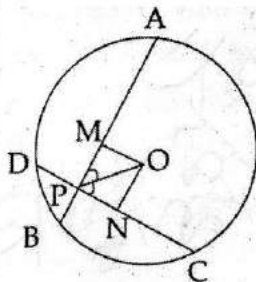
A line through O intersects PQ at A and RS at B.

Show that ar (ΔAOP) = ar(ΔBOR)

14. Prove that a cyclic parallelogram is a rectangle.   3

15. Construct a triangle whose base is of length 8 cm, one base angle is 30° and sum of other two   3
sides is 11 cm. Write steps of construction.

16. ABCD is a parallelogram in which the bisector of ∠D bisects AB at P. Show that CD = 2AD.   3

17. In the given figure, AB and CD are two chords of a   3
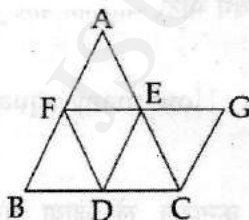circle whose centre is O. If OM⊥AB, ON⊥CD
and ∠OPM = ∠OPN, prove that MB = ND.

18. Along a path, 100 conical pillars are constructed.   Each pillar has base radius   3
14 cm and height 18 cm. Find the total cost of painting these pillars at the rate of ₹ 120 per m².
(Take $\pi = \dfrac{22}{7}$)

Question numbers **19** to **28** carry **four** marks each.   **SECTION-D**

19. A man spends ₹ 18,000 monthly on an average for the first four months and ₹ 20,000 monthly   4
for the next eight months and saves ₹ 56,000 in a year. Find his average monthly salary.

20. ABC is a triangle with D, E and F as mid-points of sides BC,   4
AC and AB respectively. A line   through C is drawn parallel to DE
meeting FE produced at G. Show that ar(DCGE) = $\dfrac{1}{2}$ ar(ΔABC)

21. ABC is an isosceles triangle inscribed in a circle. If AB = AC = 25 cm and BC = 14 cm, find the   4
radius of the circle.

22. Construct ΔABC in which ∠A = 60°, AC + BC = 11.5 cm and AB = 4 cm.   4

23. ABCD is a trapezium with AB∥CD, AB = 15 cm and CD = 10 cm. X is the mid−point of the   4
side AD. Through X, XY is drawn parallel to AB to meet BC at Y. Find the length of XY.

24. In order to promote sports in a village, Gram Panchayat of that village allocated some barren land to make a playground. In order to utilise the land for playing, a cylindrical roller of diameter 7 m and length 14 m was used to level it. If it takes 1500 revolutions to level the playground (rolling once), find : **4**
   (a) the area of the playground in hectares.
   (b) the values exhibited by the gram panchayat.

25. A conical tent is made of 4.5 m wide tarpaulin. Vertical height of the conical tent is 4 m and base radius is 3 m. Find the length of the tarpaulin used, assuming that 10% extra material is required for stitching margins and wastage in cutting (Take π = 3.14) **4**

26. The inner dimensions of a closed wooden box are 8 cm by 6 cm by 5 cm. The thickness of the wood is 1 cm. Find the total cost of the wood required to make the box, if 5 cm³ of wood costs ₹ 50. **4**

27. The capacity of a closed cylindrical vessel of height 2 m is 30.8 litres. How many square metres of metal sheet would be needed to make it ? **4**

28. A school organized an adventure camp for students to Kanatal. The following table shows the participation of students in different types of adventure activities. **4**

   Type I → trekking
   Type II → trekking and mountain climbing
   Type III → trekking, mountain climbing and rapling
   Type IV → trekking, rapling and rafting.

Type of activities	Number of students
Type I	75
Type II	62
Type III	55
Type IV	36
All	22

   Find the probability that the student chosen at random participated in
   (a) Type III activities.
   (b) All the activities.
   (c) Type I activity.
   Type II & Type IV activities

खण्ड-य/SECTION-E (मुक्त पाठ/Open Text)

Theme : Energy Consumption and Electricity Bill

29. Form linear equations for the monthly bill amounts of offices of Haryana and Rajasthan for non-domestic category. Then, find the difference between the bill amounts of offices of located in Haryana and Rajasthan, if both offices consumed 1500 units each in a month. **3**

30. Represent as a linear equation when a 200 W Mixer Grinder is used for y hours in a day. Also, find the consumption by its usage daily and in the month of September. **3**

31. Mohit bought an AC of 1.5 tons. On its box, 5.5 kW was printed. Form a linear equation to find the number of units consumed, if AC runs for y hours. Also, draw a graph to show this relation. Does the graph of the above equation passes through : **4**
   (a) (0, 0) ? (b) (7, 5) ?

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