ANANDALAYA
ANNUAL EXAMINATION
Class-VIII

Subject: Mathematics M.M: 80
Date : 28/02/2020 Time: 3 hours

विद्या सर्वार्थ साधिका

General Instructions:
1. All questions are compulsory.
2. This question paper contains 30 questions.
3. Questions 1 – 6 in Section A are very short-answer type questions carrying 1 mark each.
4. Questions 7 – 12 in Section B are short-answer type questions carrying 2 marks each.
5. Questions 13 – 22 in Section C are short -answer type questions carrying 3 marks each.
6. Questions 23 – 30 in Section D are long-answer type questions carrying 4 marks each.

SECTION-A

1. If an item marked at ` 840 is sold at ` 714. Then percentage discount is: (1)

   (a) 10% (b) 15%
   (c) 17% (d) none of these

2. The volume of the rectangular box which has length ,breadth and height as $3a$, $2a^2$ and $5a^3$ (1)
   is :

   (a) $30\ a^3$ (b) $10\ a^3$
   (c) $30\ a^5$ (d) $30\ a^6$

3. The number of non-perfect square numbers 37^2 and 39^2 are : (1)

   (a) 78 (b) 152
   (c) 150 (d) 148

4. The factors of $m^2 - 36$ is : (1)

   (a) (m - 6) (m- 6) (b) (m+ 6) (m + 6)
   (c) (m + 6) (m - 6) (d) none of these

5. The number 23453 is: (1)

   (a) a perfect square number (b) not a perfect square number
   (c) cannot say (d) none of these

6. The value of $(5^0 + 3^0 + 2^0)^2$ is : (1)

   (a) 3 (b) 10
   (c) 20 (d) 9

SECTION-B

7. Simplify $(x - 4) (2 x + 3) + 5$ and hence find its value at $x = -2$ (2)

8. Find the number of vertices, edges and faces and verify Euler's formula for the following solid. (2)

9. The length of diagonals of rhombus are 12 cm and 10 cm, find its area. (2)

10. If 24Y is a multiple of 3, where Y is a digit, what can be the value of Y? Justify your answer. (2)

11. Solve: $\dfrac{6x+1}{3} + 1 = \dfrac{x-3}{6}$ (2)

12. Find the smallest whole number by which 768 should be multiplied to make it perfect square number. (2)
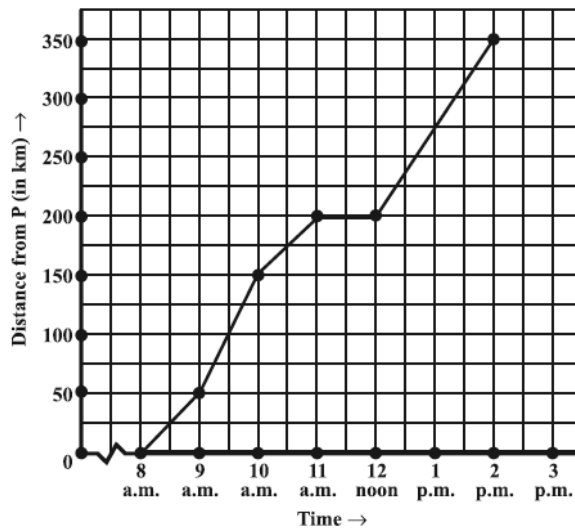
SECTION-C

13. Find the amount which Ram will get on ` 4096, if he gave it for 18 months at $12\frac{1}{2}\%$ per annum, interest being compounded half yearly. (3)

14. Draw side view, front view and top view of the given solids. (3)
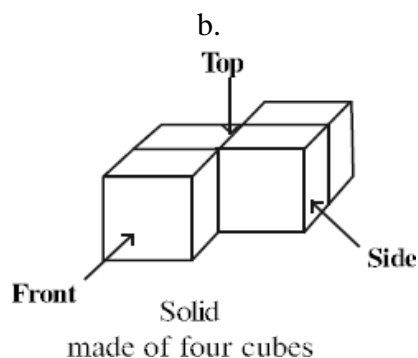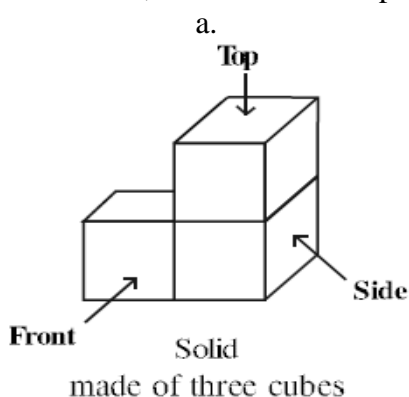
15. The internal measures of a cuboidal room are 12m × 8m× 4m. Find the cost of white washing all four walls of a room, if the rate of white washing is ` 600 per 100m^2. (3)

16. Evaluate: a. $\left\{\left(\dfrac{1}{3}\right)^{-3} - \left(\dfrac{1}{5}\right)^{-2}\right\}^{-2}$ b. $\dfrac{8^{-2} \times 5^3}{2^{-8}}$ (3)

17. In a model ship, the mast is 9 cm high, while the mast of actual ship is 12 m high. If the length of the ship is 28m, how long is the model ship? (3)

18. Factorise : (a) $x^2 + xy + 8x + 8y$ (b) $p^4 - 81$ (3)

19. Find the values of letters A and B in each of the following: (3)

(a)
```
  2  A  B
+ A  B  1
---------
  B  1  8
```

(b)
```
     B  A
  ×  B  3
---------
  5  7  A
```

(c)
```
  A  1
+ 1  B
------
  B  0
```

20. One of the digits of a two digit number is three times the other digit. If you interchange the digits of this two digit number and add the resulting number to the original number you get 88. What is the original number? (3)

21. A gardener has 3359 plants. He wants to plant these in such a way that the number of rows and the number of columns remains same. Find the number of plants he needs more to fulfill his wish. Also find the number of rows and number of columns. (3)

22. The given graph describes the distances of a car from a city P at different times when it is (3) travelling from a city P to a city Q, which are 350 km apart. Study the graph and answer the following:

(a) What information is given on the two axes?

(b) How far did the car go in the first hour?

(c) How far did the car go during the 2nd hour?

(d) Was the speed same during the first three hours?

(e) Did the car stop for some duration at any place? Justify your answer.

(f) When did the car reach city Q?

SECTION-D

23. A milkmaid sold two of her buffaloes for ` 20,000 each. On one she made a gain of 5 % (4) and on the other a loss of 10%. Find her overall gain or loss.

24. Show that: (4)
$(6 x^2 - 5y)^2 + 120 x^2 y = (6 x^2 + 5y)^2$

25. A milk tank is in the form of a cylinder whose radius is 1.75 m and length 7 m. Find the (4) quantity of milk in litres that can be stored in the tank. Also find how many cans of dimension 14 cm × 11cm × 7cm can be filled from the milk of the tank.

26. Evaluate the following : (4)

(a) $\dfrac{12^{-5} \times 20^{-6} \times 125}{10^{-7} \times 6^{-6}}$

(b) $\dfrac{2916 \times y^{-5}}{3^7 \times y^{-7}}$

27. There were 100 students in a hostel and food provisions for them is for 20 days. After 5 (4) days 25 more students joined the hostel. How long the food provisions would last now?

28. (a) Plot the following points on a graph –sheet. Verify if the lie on the same line. (4)
K (2 , 3) , L (5 , 3), M (5 , 5)

(b) Draw the line passing through (3, 4) and (4 , 3). Find the coordinates of the points at which this line meets the x- axis.

29. Factorise: (4)
(a) $36 p^2 - 9 q^2 - 30 q r - 25 r^2$
(b) $y^2 + 6 y - 16$

30. Deveshi has a total of ` 590 as currency notes in the denominations of ` 50, ` 20 and ` 10. (4) The ratio of ` 50 notes and ` 20 notes is 3:5. If she has a total of 25 notes, how many notes of each denomination she has?