

AMRITA VIDYALAYAM

ANNUAL EXAMINATION 2017 - '18

Class : VII

Marks : 80

Time : 2½ hrs

MATHEMATICS

GENERAL INSTRUCTIONS:

Questions 1 to 6 carry 1 mark each.

Questions 7 to 12 carry 2 marks each.

Questions 13 to 22 carry 3 marks each.

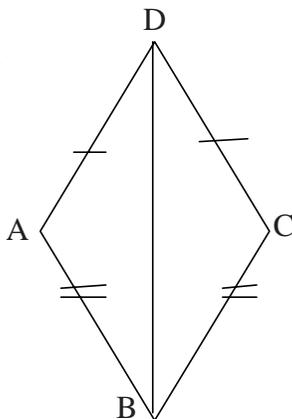
Questions 23 to 30 carry 4 marks each.

SECTION - A

1. What is the multiplicative inverse for whole numbers?
2. What is the numerical coefficient of x in $-9xy^2$?
3. Identify the side opposite to the vertex Q of ΔPQR .
4. How many altitudes does a triangle have?
5. Find 15 % of 250.
6. Find the area of a circle of radius 14cm.

SECTION - B

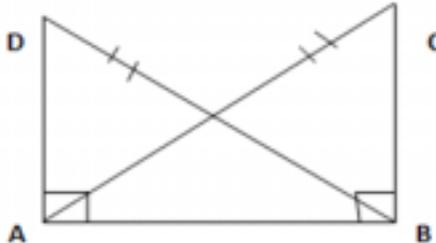
7. In figure, $AD = CD$ and $AB = CB$.
 - a) State the three pairs of equal parts in ΔABD and ΔCBD .
 - b) Is $\Delta ABD \cong \Delta CBD$? Why or why not?
 - c) Does BD bisect $\angle ABC$? Give reasons.



8. What are rational numbers?
Write the examples of rational numbers with
- both numerator and denominator negative integers.
 - numerator is positive integer and denominator is a negative integer.
9. Identify terms and factors in the expressions given below using a factor tree.
- $4x^2 - 5xy$
 - $10xyz + 3$
10. If the circumference of a circular sheet is 154m, find its radius.
Also find the area of the sheet.
11. In a computer lab, there are 3 computers for every 6 students.
How many computers will be needed for 24 students?
12. An article was bought for ₹ 800 and sold at a profit of 8%. Find the profit and selling price.

SECTION - C

13. Determine whether the triangle whose sides are of length 3cm, 4cm and 5cm is a right angled triangle.
14. If $\triangle ABC \cong \triangle FED$ under the correspondence $ABC \leftrightarrow FED$, write all the corresponding congruent parts of the triangles.
15. In fig DA perpendicular to AB, CB perpendicular to AB and $AC = BD$. Identify the three pairs of equal parts in which the following statement is meaningful.
- $\triangle ABC \cong \triangle BAD$
 - $\triangle ABC \cong \triangle ABD$



16. Solve.
- $3n + 7 = 27$
 - $4(m + 3) = 18$
 - $16 = 4 + 3(t + 2)$
17. Meena saves ₹ 400 from her salary. If this is 10% of her salary, what is her salary?

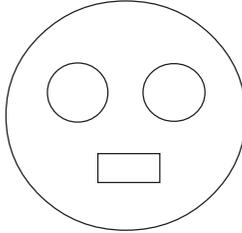
18. Find the value of

a) $\frac{5}{4} + \frac{(-12)}{4}$

b) $\frac{9}{2} \times \frac{(7)}{4}$

c) $\frac{-7}{12} \div \frac{-2}{13}$

19. From a circular card sheet of radius 14cm, two circles of radius 3.5cm and a rectangle of length 3cm and breadth 1cm are removed. Find the area of the remaining sheet.



20. In a class test (+3) marks are given for every correct answer and (-2) marks are given for every incorrect answer and no marks for not attempting any question.

a) Radhika scored 20 marks. If she has got 12 correct answers, how many questions has she attempted incorrectly?

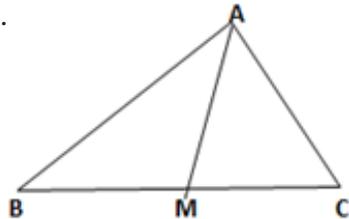
b) Mohini scores -5 marks in this test, though she has got 7 correct answers. How many questions has she attempted incorrectly?

21. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?

22. Sandeep has twice as many rupees as Sonia. Together they have ₹ 150. How many rupees does Sonia have?

SECTION - D

23. What is median of a triangle? If AM is a median of $\triangle ABC$, then show that $AB + BC + CA > 2 AM$.



24. If $m = 2$, find the value of

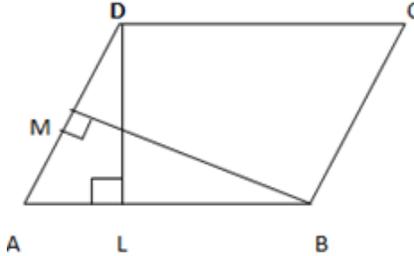
a) $3m - 5$

b) $3m^2 - 2m - 7$

25. What are monomials, binomials and trinomials? Classify the following into monomials, binomials, trinomials.

- a) $4y - 2m$ b) $x + y - 2xy$ c) $7mn$ d) $4p^2q - 4pq^2$
e) xy^2z f) $a^2 + b^2 + c^2$ g) $1 + xy + 2xy$

26. DL and BM are the height on sides AB and AD respectively of parallelogram ABCD. If the area of the parallelogram is 1470cm^2 , $AB = 35\text{cm}$ and $AD = 49\text{cm}$, find the length of BM and DL.



27. Identify whether it is profit or loss in the following transaction.

Also find profit percent or loss percent in both the cases.

- a) Gardening shears bought for ₹ 250 and sold for ₹ 325.
b) A skirt bought for ₹ 250 and sold at ₹ 150.
- 28.a) Draw ΔPQR with $PQ = 4\text{cm}$, $QR = 3.5\text{cm}$, $PR = 4\text{cm}$. What type of triangle is this?
b) Construct ΔABC with $BC = 7.5\text{cm}$, $AC = 5\text{cm}$ and $m\angle C = 60^\circ$.
29. A garden is 90cm long and 75cm broad. A path 5m wide is to be built outside and around it. Find the area of the path?
30. Aravind earns ₹ 12,000 per month. He spends 30% of monthly income on house rent, 40% on household expenses, 5% on travel and 5% for charity purposes. The remaining is saved in a bank. Find out how much does Aravind spend on charity purpose and how much does he save? What quality of Aravind is shown here?