

**Final Examination - 2017-2018**

**MATHEMATICS**

Time : 2 hrs. + 15 min.

F. M. : 80

Std. : VIII

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**SECTION A (40 Marks)**

Answer all questions

- Q1. a. Three numbers are in the ratio 1:2:3. The sum of their cubes is 7776. Find the numbers. (3)
- b. Find the compound interest on Rs 12500 for 3 years at 10% pa compounded annually. (4)
- c. Find the number of sides of a regular polygon of each of its interior angle is 168 (3)
- 2 a. A wardrobe is sold at Rs. 5510 after allowing a discount of 5%. Find the marked price of the article (3)
- b. Out of 500 students in a school 60% students read Hindi newspaper, 30% students read English newspaper and the remaining do not read any newspaper. Draw a Venn diagram and answer the questions
- i. What percentage of students do not read any newspaper?
- ii. Number of students who read Hindi newspaper
- iii. Number of students who read English newspaper
- iv. Is reading newspapers a good habit? Why? (4)
- c. Solve the equation :  $5x - 3(4x - 3) = 2(4 - 5x) + 10$  (3)
- 3 a. Factorise  $2x^2 - x - 6$  (3)
- b. i. Find the cube root of 262144 through estimation
- ii. Insert five rational numbers between  $\frac{1}{3}$  and  $\frac{2}{3}$  (4)
- c. Verify the following and name the property
- $$\frac{3}{5} \times \left( \frac{-4}{7} \times \frac{-8}{9} \right) = \left( \frac{3}{5} \times \frac{-4}{7} \right) \times \frac{-8}{9} \quad (3)$$
4. a. It takes 8 days for 12 men to construct a wall. How many men should be put on the job if it is required to be constructed in 6 days? (3)
- b. A cuboidal block of metal has dimension 36 cm by 32 cm by 0.25 m. It is melted and recasted into cubes with an edge of 4 cm
- i. How many cubes can be made?

- ii. What is the cost of coating the surfaces of the cubes at the rate of Rs. 0.15 / m<sup>2</sup> (4)
- c. Factorise :  $x^3 - x^2 + 9x - a + x - 1$  (3)

### SECTION B (40 Marks)

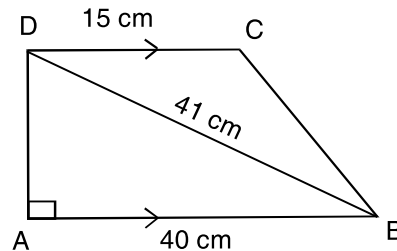
Attempt any FOUR Questions

- 5 a. Find the square root of 0.000645166 correct to three decimal places (3)
- b. Mukul buys a shirt for Rs. 523.80 including 8% VAT. Find the new selling price of the shirt if the VAT increases by 10% (4)
- c. Find the smallest number by which 5184 should be multiplied so that the product is a perfect cube. (3)
- 6 a. A road roller has a diameter 0.7 m and its width is 1.2m find the last number of revolutions that the roller must take in order to level a playground of size 120 m x 44 m. (4)
- b. The product of two numbers is 1260. If one number is 15 times the other number find the numbers (3)

- c. From the figure calculate

(i) the length of AD

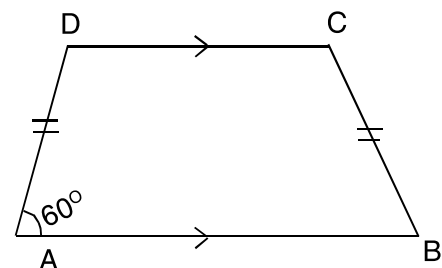
(ii) the area of trapezium ABCD



7. a. A can do a job in 10 days while B can do it in 15 days. If they work together and earn Rs. 3500, how should they share the money? (3)
- b. Factorise (i)  $a^2 - c^2 - 2ab + b^2$  (ii)  $x^2 + \frac{1}{x^2} - 7 \left(x - \frac{1}{x}\right) + 8$  (4)
- c. Evaluate  $\sqrt[3]{27} + \sqrt[3]{0.008} + \sqrt[3]{0.064}$  (3)

- 8 a. In a school students collected Rs. 2304 for a school program. Each student contributed as many rupees as the number of students in the class. Find the number of students in the class

- b. In the figure ABCD is an isosceles trapezium. If  $\angle DAB = 60^\circ$ ,  $DC = 20$  cm and  $AD = 15$  cm find the length of AB



- c. If the volume of a cylinder is 1848 cm<sup>3</sup> and the diameter of the base is 14 cm find the height of the cylinder.

9. a. There are 100 students in a hostel. Food provision for them is for 20 days. How long will these provisions last if 25 more students join the group? (3)
- b. A rectangle is 10 cm long and 8 cm wide. When each side of the rectangle is increased by xcm, its perimeter is doubled. Find the area of the new rectangle. (3)
- c. A wall hanging is marked for Rs. 4800. The shopkeeper offers 10% discount on it. If VAT rate is 8% find the amount paid by the customer. (3)
10. a. Factorise
- i.  $x^8 - y^8$
- ii.  $x^2 + 2xy - 99y^2$  (4)
- b. Solve for x
- $$\frac{3}{x+8} = \frac{4}{6-x}$$
- (3)
- c. Solve for P
- $$\frac{P}{3} + \frac{P}{4} = 55 - \frac{P+40}{5}$$
- (3)