

**ATOMIC ENERGY EDUCATION SOCIETY
ANNUAL EXAMINATION -2018-19**

CLASS: VII
SUBJECT: MATHEMATICS

TIME: 3 HRS
MARKS: 80

To be filled by the student

Student's Name: _____

Name of the School: _____

Class /Sec. : _____ Roll No.: _____

Date of Examination: _____

General Instructions:

The question paper consists of 30 questions of four sections.

Section A consists of 6 questions of 1 mark each.

Section B consists of 6 questions of 2 marks each.

Section C consists of 10 questions of 3 marks each.

Section D consists of 8 questions of 4 marks each.

All questions are compulsory

Draw diagrams wherever necessary. Use of calculators is not allowed.

SECTION –A

(6m)

1. 5% of x is 400. Find x . 1
2. Write the integers lying between the rational numbers $-3\frac{1}{3}$ and $-1\frac{1}{4}$. 1
3. Find the radius of the circle which has a circumference of 44cm. 1
4. Find the value of $3x^2 - 5x + 3$ when $x=2$. 1
5. Moon is 384400000 meters away from the earth. Express the distance in standard form. 1
6. What cross section do you get when you give a vertical cut to a conical cap? 1

SECTION –B

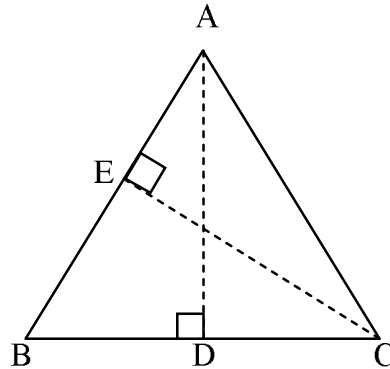
(12m)


7. The sides of ΔXYZ are $XY=2\text{cm}$, $YZ=3\text{cm}$ and $XZ=5\text{cm}$. Can the ΔXYZ be constructed ?
Justify your answer. 2
8. Divide Rs 540 in the ratio 4:5 . 2
9. Find the multiplicative inverse of: $\frac{4}{7} \times \frac{21}{28}$ 2
10. Find the length and breadth of a rectangle given that its perimeter is 240 cm and the length is four times the breadth. 2
11. Add $4x^2 - 5xy + 3y^2$, $-6x^2 - 4xy + 2y^2$, $2x^2 + 10xy - 5y^2$ 2
12. Simplify and express in exponential form : $[(2^3)^2 \times 3^6] \times 5^6$ 2

SECTION -C

(30m)

13. Construct $\triangle PQR$ where $PQ=5\text{cm}$, $m\angle PQR=105^\circ$ and $m\angle QPR=45^\circ$. 3
14. A man borrowed Rs.8500 from a money lender at an interest rate of 20% per annum. After sometime he paid back Rs. 13600 . Find the time. 3
15. Represent the following rational numbers on the same number line. 3
- $\frac{-1}{4}$, $\frac{-7}{8}$, $\frac{5}{8}$, $\frac{3}{4}$
16. $\triangle ABC$ is isosceles with $AB = AC = 7.5 \text{ cm}$ and $BC = 9\text{cm}$. The height AD from A to BC is 6 cm . Find the area of $\triangle ABC$. What will be the height from C to AB ? 3



17. Construct an isosceles right - angled triangle PQR with $m\angle PQR = 90^\circ$ and $PQ = 5\text{cm}$. 3
18. In a parallelogram the altitude is three times the length of the base. Its area is 7500 cm^2 . Find the length of the base and the altitude. 3
19. Simplify the expression $2(x^2 - 3y) - 5(5x^2 - 4y)$ and find its value when $x = -1$ and $y = 2$. 3
20. (a) Evaluate : $(2^0 + 3^0 + 4^0) - (4^0 - 3^0 - 2^0)$
 (b) Express 108×192 as a product of prime factors in exponential form 3
21. Draw the front side and top view of (a) cylinder (b) Triangular pyramid 3
22. (a) What is the angle of rotational symmetry of a regular hexagon ?
 (b) Write the order of rotational symmetry of the given figure 
 (c) Draw the mirror images of the alphabets **Z** and **P** about a vertical mirror. 3

SECTION -D

(32m)

23. From the sum of $3x^2 - 5x + 3$ and $-5x^2 - 6x + 7$, subtract $2x^2 - 10x + 9$. 4
24. By selling an article for Rs 240 a man makes a profit of 20% .What is his CP ? What would his profit percent be if he sold the article for Rs 275 ? 4
25. Divide the sum of $\frac{12}{25}$ and $\frac{21}{50}$ by the product of $1\frac{5}{8}$ and $\frac{9}{10}$. 4

26. Two cross roads, each of width 10 m, cut at right angles through the centre of a rectangular park of length 700 m and breadth 300 m and parallel to its sides. Find the area of the roads. Also find the cost of constructing the roads at the rate of Rs. 110 per m². 4
27. Construct $\triangle ABC$ in which $BC = 5.5\text{cm}$, $AB=4.5\text{cm}$ and $AC=6\text{cm}$. Through the vertex A of $\triangle ABC$ draw a line XY parallel to side BC. 4
28. Evaluate : a) $\frac{5^4 \times 27}{25 \times 243}$ b) $\frac{(2^5)^2 \times 7^3}{8^3 \times 7}$ 4
29. Draw the nets of the following :
(a) Triangular prism (b) Cube (c) Square pyramid (d) Cone 4
30. Draw the rough sketches to show all the lines of symmetry for the following:
(a) Square (b) Equilateral triangle (c) Isosceles triangle (d) Rhombus 4
