

SAMPLE PAPER
APEEJAY COMMON ANNUAL EXAMINATION 2019-20
CLASS :VIII
SUBJECT: MATHEMATICS
TIME ALLOWED:3HRS
MAX.MARKS:80

GENERAL INSTRUCTIONS:-

1. All questions are compulsory.
2. The question paper consists of 30 questions divided into four sections A, B, C and D.
Section-A comprises 6 questions of 1 mark each.
Section-B comprises 6 questions of 2 marks each.
Section-C comprises 10 questions of 3 marks each.
Section D comprises of 8 questions of 4 marks each.
3. Use of calculator is not permitted

Section A – 6 Questions of 1 marks each

1. The sum of two numbers is 144. One of the numbers decreased the other by 81. Find the numbers.
2. What is the coordinate of point Q on the graph at $x = 3$ and $y = -4$
3. If $m - 10 = -21$, find m .
4. What is area of a rectangle whose perimeter is 169 cm and length is 12 cm?
5. Define Euler's formula.
6. What is the volume of a cube with side 10 cm?

Section B –6 Questions of 2 marks each

7. If the longer side of a trapezium is 12 cm and the distance between the parallel sides is 6 cm. Find the smallest parallel side if the area of figure is 72 cm^2 .
8. Using the Identity $(a - b)^2$, find 999^2
9. Find k if $0.7k - 1.9 = 0.3(k + 14)$
10. What will be the labor charges for digging a cubical pit of 8 m at the rate of Rs.15 per m^3 .
11. State whether the following equation is linear or not and solve it: $\frac{(x+1)}{(x-3)} = \frac{1}{3}$
12. Is 225 a perfect square? If so, find the number whose square is 225. Explain.

Section C –10 questions of 3 marks each

13. Simplify ;

(i) $(5x - 6)(2x - 3) + (3x + 5)^2$

(ii) $(2x + 5y)(2x + 3y)$

14. Find the least number which must be subtracted from 18265 to make it a perfect square. Also, find the square root of the resulting number.

15. An aquarium is in the form of a cuboid whose external measures are 80 cm x 30 cm x 40 cm. The base, side faces and back face are to be covered with the coloured paper. Find the area of paper needed.

16. Two numbers are in ratio 5 : 3. If they differ by 18, what are the numbers?

17. The ratio of the present ages of Sunil and his wife is 4 : 3. After 4 years, the ratio of their ages will be 9 : 7. What is the present age of Sunil?

18. A 5m 60cm high pole casts a shadow of length 3m 20cm.

a) Find at the same time the length of a shadow cast by another pole 10m 50cm high.

b) Find the height of the pole if the length of the shadow is 6m 40cm.

19. Consider the following data which gives the number of goals scored by 16 players in a football tournament. 6, 8, 8, 6, 5, 4, 4, 8, 9, 8, 10, 6, 9, 8, 4, 8. Find the median, mean and the mode.

20. Two articles are bought for Rs. 1600. One of them is sold at a profit of 20% and the other at a loss of 20%. If the selling prices of both are same; find the cost price of each.

21. Rohit is making a wheel using spokes. He wants to fix equal spokes in such a way that the angles between any pair of consecutive spokes are equal. Help him by completing the following table:

No. of Spokes	4	6	8	10
Angle between a pair of consecutive spokes	90°	60°	?	?

a) Are the number of spokes and the angles formed between the pair of consecutive spokes in inverse proportion?

b) Calculate the angle between a pair of consecutive spokes on a wheel with 15 spokes.

c) How many spokes would be needed if the angle between a pair of consecutive spokes is 40°?

22. Two buildings are 20 m and 25 m high. If the buildings are 12 m apart, find the distance between their tops.

Section D – 8 questions of 4 marks each

23. A frequency distribution of marks is given below:

Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of Students	5	12	10	5	3

Draw a Histogram for the above table.

24. a) What is the difference between a normal bar graph and double bar graph?

b) Draw a line graph for the following

Side of square(in cm)	10	20	25	30	40
Perimeter (in cm)	40	80	100	120	160

25. The diagonals of a quadrilateral are of lengths 6 cm and 8 cm. If the diagonals bisect each other at right angles, what is the length of each side of the quadrilateral?

26. A shopkeeper purchased 100 notebooks for Rs. 20 each. However, he was not able to sell 10 notebooks since those were damaged. The remaining notebooks were sold at Rs. 25 each. Find the gain or loss percentage.

27. The dimensions of a room are $16 \times 14 \times 10$ meters. There are 4 windows of $1.3 \text{ m} \times 1.4 \text{ m}$ and 2 doors of $2 \text{ m} \times 1 \text{ m}$. What will be the cost of white washing the walls and painting the doors and windows, if the rate of white washing is Rs.5 per m^2 and rate of painting is Rs.8 per m^2 .

28. The difference in simple interest and compound interest on a certain sum of money in 3 years at 10 % p.a. is Rs. 372. Find the the sum .

29. a) Find m so that $(-3)^{m+1} \times (-3)^5 = (-3)^7$

b) Find the value of $(3^0 + 4^{-1}) \times 2^2$

30. a) Work out the following divisions: (i) $7x^2 + 14x \div (x+2)$

(ii) $5pq(p^2 - q^2) \div 2p(p + q)$

b) Factorise : i) $25x^3y - 81xy$

ii) $49x^2 - 169y^2$

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