



35/2

Roll No.	
Name	
Class & Section	

**APEEJAY COMMON ANNUAL EXAMINATION, 2019-20****MATHEMATICS****Time Allowed : 3 Hrs.****Class – VII****Maximum Marks : 80****General instructions :***All questions are compulsory.**Q.1-6 carry 1 mark each**Q. 7-12 carry 2 marks each**Q. 13-22 carry 3 marks each.**Q. 23-30 carry 4 marks each***Section-A**

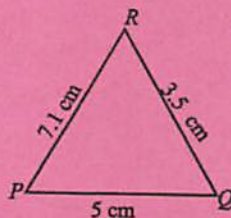
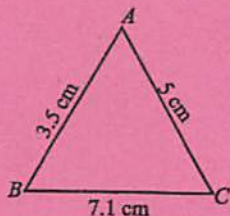
- Find  $x$ , if  $16 : 12 :: 12 : x$
- Find the area of a square whose perimeter is 320 cm.
- What cross-sections do you get when you give a (i) vertical cut (ii) horizontal cut to the figure given below?



- Name a plane figure which has (i) Infinite lines of symmetry (ii) 3 lines of symmetry.
- Express 256 as a power of 2.
- Examine the two triangles and fill in the blanks :

(a)  $\triangle ABC \cong \dots\dots\dots$

(b)  $\angle ACB = \dots\dots\dots$



### Section-B

7. Harish scored twice as many runs as Rahul. Together their runs fell 2 short of a double century. How many runs did each score?
8. Every year Sudha got an increment which was 2% of her salary. If her salary in the year 2018 is ₹ 7800 per month then what will be her monthly salary in 2019?
9. Simplify the given expression and find its value for  $m = 2$ ,  $n = -3$ ,  $p = -4$ ,  
 $3mn^3 - 2p - (5mn^3 - 2p)$ .
10. Write the shape of faces of a square pyramid and also mention number of faces of each type.
11. There are 6 marbles in a box with numbers from 1 to 6 marked on each of them.  
(i) What is the probability of drawing a marble with even prime number?  
(ii) What is the probability of drawing a marble with number less than 7?
12. Find value of  $n$ , if  $5^{2n} + 5^3 = 125$ .

### Section-C

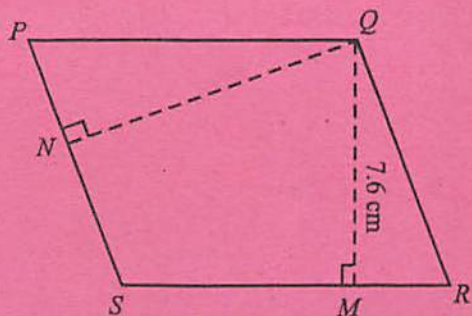
13. Solve the given equation for  $m$ .

$$7m + \frac{19}{2} = 13$$

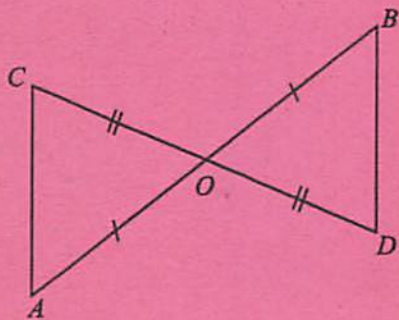
14. Complete the following table :

S.No.	Figure/Alphabet	No. of lines of symmetry	Order of rotational symmetry	Angle of Rotation
1	Regular hexagon			
2.	H			

15. By selling a painting for ₹ 5280, Rahul made 10% profit. For how much should he have sold it to make 15% profit.
16.  $PQRS$  is a parallelogram.  $QM$  is the height from  $Q$  to  $SR$  and  $QN$  is the height from  $Q$  to  $PS$ . If  $SR = 12$  cm and  $QM = 7.6$  cm. Find :  
(a) The area of the parallelogram  $PQRS$   
(b)  $QN$ , if  $PS = 8$ cm. (See figure on page 3)



17. How much is  $x^2 - 2xy + 3y^2$  greater than  $2x^2 - 3y^2 + xy$ ?
18. A corridor of a school is 8 m long and 6 m wide. It is to be covered with canvas sheets. If the size of one sheet is 2 m x 1 m, find the cost of canvas sheets required to cover the corridor at the rate of ₹ 8 per sheet.
19. At what rate of interest would ₹ 7500 amount to ₹ 11,700 after 8 years?
20. In the given figure,  $AB$  and  $CD$  bisect each other at  $O$ .
- (i) State the three pairs of equal parts in  $\triangle AOC$  and  $\triangle BOD$ .
- (a) Is  $\triangle AOC \cong \triangle BOD$ ? Give reasons.
- (b) Is  $AC = BD$ ? Justify your answer.



21. (a) The following data gives the number of birthday cakes sold by a bakery shop for 10 consecutive days.  
5, 8, 6, 9, 5, 6, 10, 8, 7, 6. Find the mean and mode of the given data.
- (b) The median of observations 18,  $x+2$ ,  $x+4$ , 34, 36 arranged in ascending order is 24. Find the value of  $x$ .

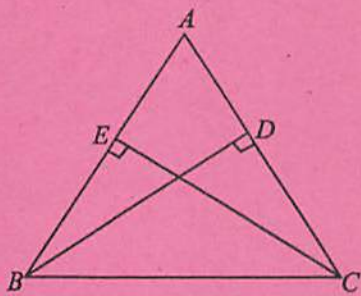
22. Draw a line segment  $AB = 5$  cm. Take a point  $P$  outside  $AB$ . Draw a line  $l$  through point  $P$  parallel to  $AB$  using ruler and compass.

#### Section-D

23. Construct  $\Delta PQR$ , where  $\angle P = 90^\circ$ ,  $QR = 8.9$  cm,  $PQ = 4.3$  cm using ruler and compass.
24. If 5 is subtracted from a number and the difference is multiplied by 6, the result is 6 more than two times the number. Find the number.
25. Two cross roads, each of width 5m, run at right angles through the centre of a rectangular park of length 70 m and breadth 45 m and parallel to its sides. Find the area of the roads. Also find the cost of constructing the roads at the rate of ₹ 105 per square metre.
26. (i) Simplify the following using laws of exponents. Also mention the laws used.

$$\frac{(125 \times 5^2 \times a^7)}{5^7 \times a^4}$$

- (ii) Find the value of  $(6^2)^0 + (-5)^0 + 1$
27. Rahul borrowed ₹ 60,000 from a bank at 9% per annum for 2 years. He lent this sum of money to Sanjay at 10% per annum for 2 years. How much did Rahul earn from the transaction?
28. In the given figure,  $BD$  and  $CE$  are altitudes of  $\Delta ABC$  such that  $BD = CE$ .
- (i) State the three pairs of equal parts in  $\Delta CBD$  and  $\Delta BCE$ .
- (ii) Is  $\Delta CBD \cong \Delta BCE$ ? Give reasons.
- (iii) Is  $\angle DCB = \angle ECB$ ? Justify your answer.



29. (a) From the sum of  $3x^2 - 5x + 2$  and  $-5x^2 - 8x + 9$ , subtract  $4x^2 - 7x + 9$ .
- (b) Express 30079.81 in standard form.
30. The following data gives the maximum and minimum temperature (in °C) of the cities on a particular day.

City	Bengaluru	Chennai	Delhi
Maximum temperature	25	34	40
Minimum temperature	19	27	28

- (a) Draw a double bar graph choosing an appropriate scale .
- (b) Name the city which has the least difference between its minimum and the maximum temperature.