COMMON APEEJAY ANNUAL EXAMINATION, 2021-22
SUBJECT – MATHEMATICS
CLASS – VII

TIME – 2 Hrs. **M.M. - 50**

General Instruction:
a) All questions are compulsory.
b) Section A - Question 1 to 15 carry 1 mark each.
c) Section B - Question 16 to 21 carry 2 marks each.
d) Section C - Question 22 to 26 carry 3 marks each.
e) Section D - Question 27 to 28 carry 4 marks each.

Section A

Q1. Number of children in six different classes are given below :

Class	*Number of children*
6	400
7	350
8	320
9	280
10	225
11	200

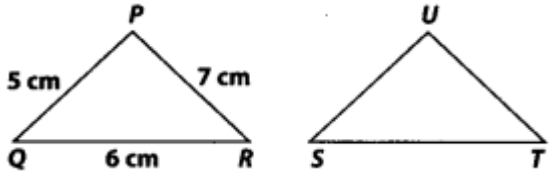
In how many classes is the number of children less than 500?
(a) 2
(b) 4
(c) 5
(d) 6

Q2. A die is thrown. What is the probability of getting 6?
(a) 0
(b) 1/6
(c) 1/2
(d) 1

Q3. Solve the equation $5p + 2 = 17$
(a) 2
(b) 3
(c) 4
(d) 5

Q4. Write the following statement in the form of an equation:
Add 1 to three times n to get 7
(a) $3n + 1 = 7$
(b) $3n – 1 = 7$
(c) $3n + 7 = 1$
(d) $3n – 7 = 1$

Q5. If ΔPQR is congruent to ΔSTU (see figure), then what is the length of TU?
(a) 5 cm
(b) 6 cm
(c) 7 cm
(d) 10 cm

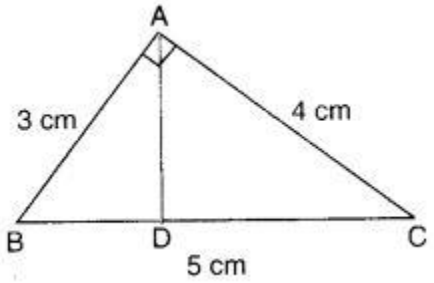


Q6. 'Under a given correspondence, two triangles are congruent if two angles and the side included between them in one of the triangles are equal to the corresponding angles and the side included between them of the other triangle.'
The above is known as
(a) SSS congruence of two triangles
(b) SAS congruence of two triangles
(c) ASA congruence of two triangles
(d) RHS congruence of two right-angled triangles

Q7. The marks in a test decreased from 40 to 30. The percentage decrease is
(a) 10%
(b) 20%
(c) 25%
(d) 40%

Q8. Kabir paid Rs. 9600 as interest on a loan he took 5 years ago at 16% rate of simple interest. What was the money he took as loan?
(a) Rs. 16400
(b) Rs. 12000
(c) Rs. 12500
(d) Rs. 18000

Q9. Find AD in the following figure:



(a) 3 cm
(b) 4 cm
(c) 5 cm
(d) 2.4 cm

Q10. The area between two concentric circles of radius R and r is:
(a) $2\pi R^2 - 2\pi r^2$
(b) $\pi(R^2 + r^2)$
(c) $\pi(R^2 - r^2)$
(d) $2\pi(R + r)(R - r)$

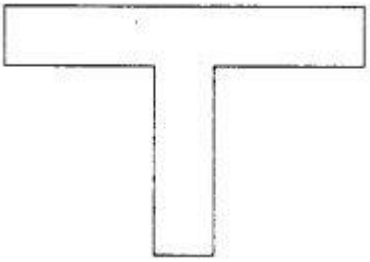
Q11. The perimeter of a rectangle is 130 cm. If the breadth of the rectangle is 30 cm, find its length. Also find the area of the rectangle.
(a) 35cm, 1050 cm^2
(b) 35cm,1350 cm^2
(c) 25cm,750 cm^2
(d) 40cm,1200 cm^2

Q12. What is the coefficient of x in the expression $2 - x + y$?
(a) 2
(b) 1
(c) -1
(d) -2

Q13. Simplify: $- z^2 + 22z^2 - 5z - 11z^2 + 5z$
(a) z^2
(b) $10z^2$

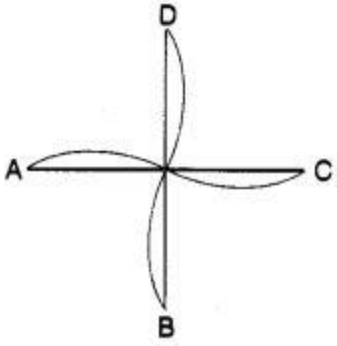
(c) 5z
(d) -5z

Q14. How many lines of symmetry are there in the following figure?



(a) 1
(b) 2
(c) 3
(d) 4

Q15. What is the order of the rotational symmetry of the following figure?



(a) 4
(b) 3
(c) 2
(d) 1

Section B

Q16. Solve: $0 = 16 + 4(m - 6)$

Q17. Write all six pairs of equal measures in the given congruent triangles.
$\Delta STU \cong \Delta DEF$

Q18. Construct an equilateral triangle of side 5.5 cm.

Q19. Construct the right angled ΔPQR, where $m\angle Q = 90°$, QR = 8cm and PR = 10 cm.

Q20. Find the value of the given polynomial at m = 1, n = - 1 and p = 2

$m^3 + n^3 + p^3$

Q21. Draw any two figures which have the order of rotational symmetry 2.

Section C

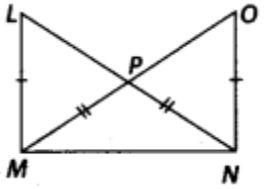
Q22. The performance of a student in 1st Term and 2nd Term is given below. Draw a double bar graph for showing the performance.

Subject	English	Hindi	Maths	Science	S. Science
1st Term	67	72	88	81	73

(M.M. 100)					
2nd Term (M.M. 100)	70	65	95	85	75

Q23. Sachin scored twice as many runs as Rahul. Together, their runs fell two short of a double century. How many runs did each one score?

Q24. In the given figure, it is given that LM = ON and NL = MO
(a) State the three pairs of equal parts in the triangles NOM and MLN.
(b) Is ΔNOM ≅ ΔMLN. Give reason.



Q25. Draw a line *l*. Draw a perpendicular to *l* at any point on *l*. On this perpendicular choose a point X, 4 cm away from *l*. Through X, draw a line m parallel to *l*.

Q26. From the sum of $4 + 3x$ and $5 – 4x + 2x^2$, subtract the sum of $3x^2 – 5x$ and $–x^2 + 2x + 5$.

Section D

Q27. In an entertainment programme, 250 tickets of ₹ 400 and 500 tickets of ₹ 100 were sold. If the entertainment tax is 40% on ticket of ₹ 400 and 20% on ticket of ₹ 100, find how much entertainment tax was collected from the programme.

Q28. 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 area of the park excluding cross roads. Give the answer in hectares.