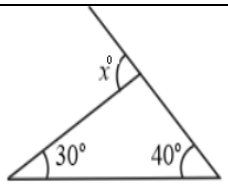
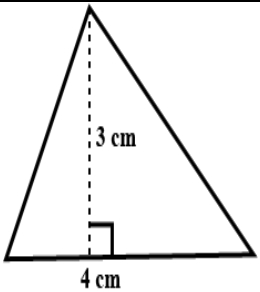
INDIAN SCHOOL SOHAR
TERM II EXAMINATION (2022-23)
MATHEMATICS

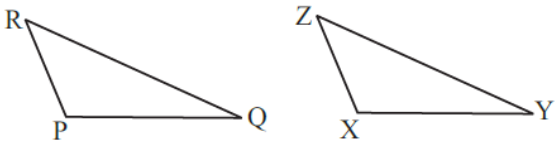
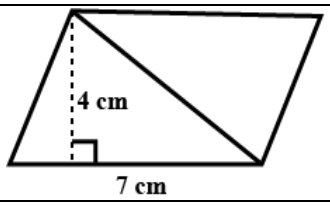
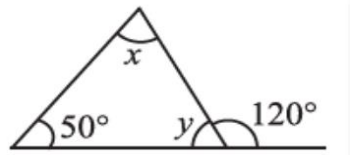
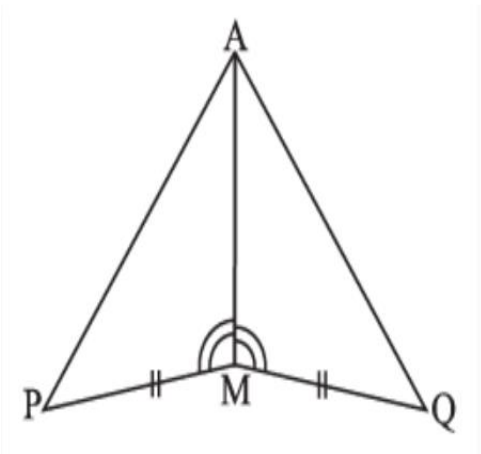
CLASS: VII **MAX. MARKS: 80**
DATE: 02 /03 / 2023 **TIME: 3 HOURS**

General Instructions:

1. This Question Paper has 5 Sections A, B, C, D and E.
2. Section A has 15 Multiple Choice Questions (MCQs) carrying 1 mark each.
3. Section B has 6 questions carrying 02 marks each.
4. Section C has 7 questions carrying 03 marks each.
5. Section D has 6 questions carrying 04 marks each.
6. Section E has 2 case Based integrated units of assessment (4 marks each). Case I with sub - parts of the values 1,1 and 2 marks each respectively and Case II with sub-parts of the values 2 and 2 marks each respectively.
7. All Questions are compulsory. However, an internal choice in 2 Questions of 2 marks, 3 Questions of 3 marks and 3 Questions of 4 marks has been provided. An internal choice has been provided in the 2 marks Question in Case I of Section E.
8. Draw neat figures wherever required.

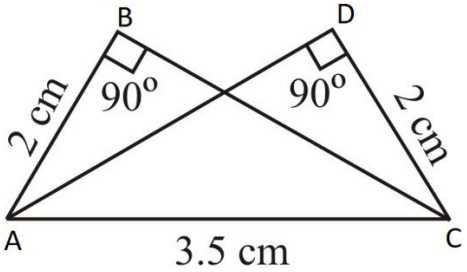
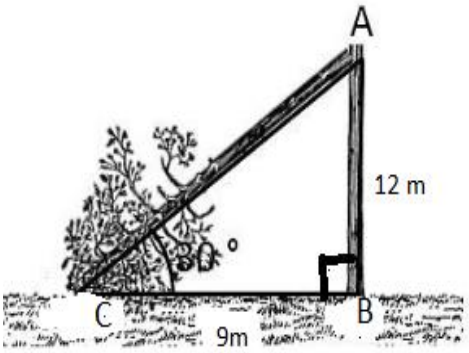
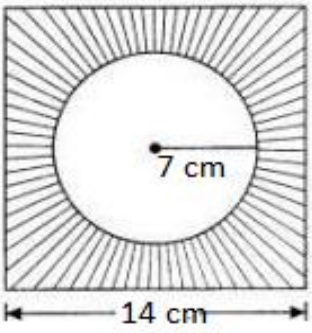
SECTION A
(Section A consists of 15 MCQs of 1 mark each)

Q. No.	Question	Marks
1.	How many altitudes can a triangle have? (a) 3 (b) 4 (c) 5 (d) 6	1
2.	Find the value of the expression $4p + 7$ for p = (−2). (a) 1 (b) (−1) (c) 2 (d) (- 2)	1
3.	Find the value of $(-2)^4$. (a) 8 (b) (−8) (c) 16 (d) (-16)	1
4.	Find the value of x in the adjoining figure. (a)120^0 (b) 90^0 (c) 50^0 (d) 70^0 	1
5.	Write the following statement in the form of an equation: "Add 1 to three times x to get 7". (a) $3x = 7$ (b) $3x - 1 = 7$ (c) $3x + 1 = 7$ (d) $7x + 1 = 7$	1
6.	Among two congruent angles, one has a measure of 70°; the measure of the other angle is: (a) 70^0 (b) 40^0 (c) 50^0 (d) 60^0	1
7.	Find the value of 'n' in the equation $3n + 7 = 25$. (a) 2 (b) 4 (c) 6 (d) 8	1
8.	Find the value of $2^0 + 3^0 + 4^0$. (a) 3 (b) 4 (c) 5 (d) 9	1
9.	Find the value of 'x' in the equation $8x = 24$. (a) 1 (b) 2 (c) 3 (d) 4	1
10.	How many terms are there in the algebraic expression: $2xy^2 + 4yz$? (a) 1 (b) 2 (c) 3 (d) 4	1
11.	Find the area of the triangle in the adjoining figure. (a) $24cm^2$ (b) 4 cm^2 (c) $12cm^2$ (d) $6cm^2$ 	1

12.	What is 15% of 2000 kg. (a) 300 kg (b) 400 kg (c) 500kg (d) 600 kg	1
13.	An alloy contains 30% of copper, 40% of zinc and the rest is nickel. Find the percentage of nickel in the alloy. (a) 30% (b) 40% (c) 50% (d) 60%	1
14.	Which congruence criterion do you use in the following figure? Given: ZX = RP, RQ = ZY, ∠PRQ = ∠XZY, So, ΔPQR ≅ ΔXYZ (a) SSS (b) SAS (c) ASA (d) RHS 	1
15.	Find the area of the parallelogram in the given figure. (a) 13cm^2 (b) 14cm^2 (c) 28cm^2 (d) 56cm^2 	1
	SECTION B **(Section B consists of 6 questions of 2 marks each)**	
16.	Find the values of x and y in the given figure. 	2
17.	If ΔDEF ≅ ΔBCA, write the part(s) of ΔBCA that correspond to: (i) ∠E (ii) ∠F (iii) EF (iv) DF	2
18.	Express 512 by using the exponential notation. **OR** Using laws of exponents, simplify and write the answer in exponential form: $(5^2)^3 \div 5^3$	2
19.	Show the terms and factors in the following expression by the tree diagram: $5xy^2 + 8yz$	2
20.	Find the value of 'x' in the equation $6x - 7 = 23$.	2
21.	An article was bought for ₹ 400 and sold for ₹ 336. Find the loss and loss per cent. **OR** Out of 32 students in a class, 24 are present. What per cent of the students are absent?	2
	SECTION C **(Section C consists of 7 questions of 3 marks each)**	
22.	You have to show that ΔAMP ≅ ΔAMQ. In the following proof, supply the missing reasons. 	3

Steps	Reasons
(i) PM = QM	(i) ……..
(ii) ∠PMA = ∠QMA	(ii) ……..
(iii) AM = AM	(iii) ……..
(iv) ΔAMP ≅ ΔAMQ	(iv) ……..
(v) PA = QA	(V) ……..
(vi) ∠P = ∠Q	(vi ……..

23.	Rupendra's father's age is 5 years more than five times Rupendra's age. Find Rupendra's age, if his father is 45 years old. **OR** Solve the equation: $-2(x+3)=18$	3
24.	Simplify and express in exponential form: $\frac{3\times11^2\times7^4}{21\times11}$ **OR** Express the following as a product of prime factors only in exponential form: 64 × 729	3
25.	Add the expressions: $24ab-10b-18a \text{ and } 30ab+12b+14a$.	3
26.	The perimeter of a rectangle is 150 cm. If the breadth of the rectangle is 30 cm, find its length. Also find the area of the rectangle. **OR** A wire is looped in the form of a circle of radius 35 cm. If it is rebent in the form of a square. What will be the length of each side of the square? (Take π =$\frac{22}{7}$)	3
27.	Construct a triangle PQR, given that PQ = 4 cm, QR = 5 cm and PR= 6 cm.	3
28.	Find the interest on ₹ 5000 for a period of 4 years at the rate of 8% per annum. Also, find the amount to be paid at the end of the period.	3
	SECTION D **(Section D consists of 6 questions of 4 marks each)**	
29.	Fill in the blanks in the given table below: **S No.** | **Expression** | **Term With Factor x** | **Coefficient Of x** | **Term With Factor y** | **Coefficient Of y** (i) | $4x+3y+5$ | ..... | ..... | ..... | ..... (ii) | $6xy^2-5x^2y-8$ | ..... | ..... | ..... |	4
30.	Simplify and write the answer in the exponential form. (i) $(6^3\times6^4)\div6^3$ (ii) $\{(5^3)^2\times5^4\}\div5^7$	4
31.	If Manohar pays an interest of ₹ 1000 for 2 years on a sum of ₹ 10,000, find the rate of interest? Also, find the amount to be paid at the end of the period. **OR** Mr. Rajesh purchased a house for ₹ 500000. If he sold it for ₹ 550000, find his gain and gain percent.	4
32.	From a circular sheet of radius 4 cm, a circle of radius 3 cm is removed. Find the area of the remaining sheet. (Take π = 3.14)  **OR** The area of a square park is the same as that of a rectangular park. The side of the square park is 60 m and the length of the rectangular park is 90 m. (i) Find the breadth of the rectangular park. (ii) Find the perimeter of the rectangular park.	4
33.	From the sum of $3x+3y+11$ and $4x+3y+5$ subtract $4x-y-11$ **OR** Simplify the following expression and find its value, if $x=2$. $x+7+5(x-5)$	4

34.	In the given figure, Δ ABC and Δ CDA are right angled at B and D respectively and BA = DC.  (i) State the three pairs of equal parts in two triangles ABC and CDA. Give reasons. (ii) Is Δ ABC ≅ Δ CDA? Give reasons. (iii) Is BC = DA? Give reasons.	4
	SECTION E **(Section E consists of 2 Case study questions of 4 marks each)**	
35.	**CASE – I:** Suresh is having a garden near Delhi. In the garden, there are different types of trees and flower plants. One day due to heavy rain and storm one of the trees got broken at a height of 12 m as shown in the figure. Its top touches the ground at a distance of 9 m from the base of the tree. Answer the following questions: (i) What is the Pythagoras property? (ii) In which type of triangle is Pythagoras property applicable? (iii) Find the original height of the tree. **OR** Find the area of the right angled triangle formed.  	1 1 2
36.	**CASE – II:** Observe the figure given below and answer the following questions:  (i) Find the area of the circle and the square shown in the figure. (ii) Find the area of the shaded portion shown in the figure.	2 2

**********THE END**********