Directorate of Education, GNCT of Delhi

PRACTICE PAPER (Session: 2023 – 24)

Class: VIII **Subject: Mathematics**

Duration: $2\frac{1}{2}$ hours **Maximum Marks: 60**

GENERAL INSTRUCTIONS:

Read the following instructions carefully and follow them:

(i) This question paper contains **16** questions. **All** questions are compulsory.

(ii) Question paper is divided into **FIVE** sections – **Section A, B, C, D** and **E**.

(iii) In **section A** – question number **1** have multiple choice questions (MCQs) of **1** mark each.

(iv) In **section B** – question number **2** to **7** are Objective type questions of **2** marks each.

(v) In **section C** – question number **8** to **10** are Short Answer (SA) type questions carrying **3** marks each.

(vi) In **section D** – question number **11** to **13** are Long Answer (LA) type questions carrying **5** marks each.

(vii) In **section E** – question number **14** to **16** are **source based/case study** questions carrying **4** marks each. Internal choice is provided in **2** marks question in each **source based/case study question**.

(viii) There is no overall choice. However, an internal choice has been provided in 1 question in Section **B**, 1 question in Section **C** and 2 questions in Section **D.**

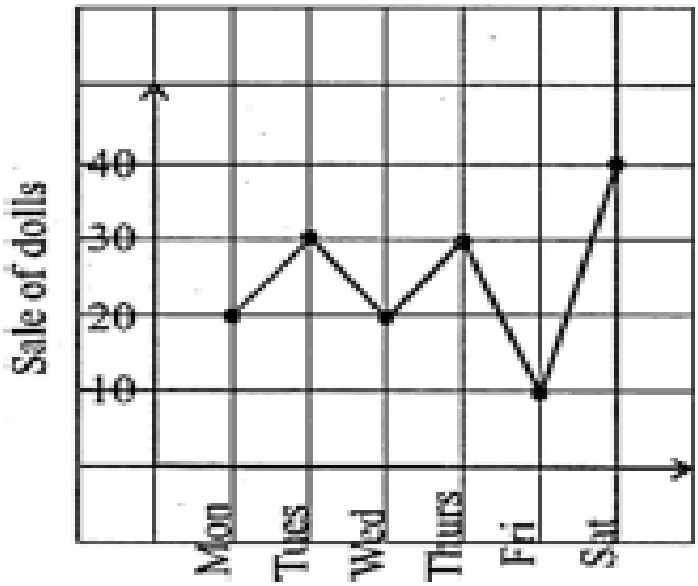
(ix) Draw neat figures wherever required. Take $\pi = \frac{22}{7}$ wherever required if not stated.

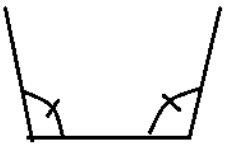
(x) Use of calculators is **NOT allowed.**

SECTION - A

Question 1 consists of Multiple Choice questions (i-xii) of 1 mark each.

Q. No.		Mark
1.(i)	The smallest natural number by which 108 must be divided so that quotient is a perfect square is: (a) 6 (b) 4 (c) 3 (d) 2	**1**
(ii)	The digit in the unit place of the cube of number 333 is: (a) 9 (b) 7 (c) 6 (d) 3	**1**
(iii)	The solution of the equation $\frac{(x-2)}{3} = \frac{5(x-4)}{12}$ is: (a) 2 (b) 4 (c) 6 (d) 12	**1**

(iv)	The sales price of a printer is ₹13000. The sales tax charged on it is at the rate of 12%. The amount Vinod will have to pay if he buys it is: (a) ₹ 11460 (b) ₹ 13560 (c) ₹ 14560 (d) ₹ 15460	**1**
(v)	The sum of (mn + 5 – 2) and (mn + 3) is: (a) 2mn + 3 (b) 2mn + 8 (c) 6 (d) 2mn + 6	**1**
(vi)	A 5m 60cm high vertical pole casts a shadow 2m 80cm long. At the same time the length of the shadow cast by another pole 7m 50cm high is: (a) 3m 75cm (b) 4m 70cm (c) 10m 30cm (d) 15m	**1**
(vii)	Factorised form of $y^2 + 19y – 150$ is: (a) (y – 25)(y + 6) (b) (y + 6)(y + 25) (c) (y – 25)(y – 6) (d) (y + 25)(y – 6)	**1**
(viii)	The following line graph shows the sale of dolls by Suhas from Monday to Saturday on a particular week. If the cost of one doll is ₹ 35, then the amount received by Suhas receive from the sale of dolls on Saturday is:  (a) ₹ 1050 (b) ₹ 1400 (c) ₹ 1750 (d) ₹ 2100	**1**
(ix)	The cost of an electric scooter is ₹ 175000. If its value depreciates at the rate of 20% per annum, then its price after 3 years will be: (a) ₹ 89600 (b) ₹ 85400 (c) ₹ 84600 (d) ₹ 82500	**1**

(x)	The volume of a cube of side '2a' is: (a) $4a^3$ (b) $6a^3$ (c) $8a^2$ (d) $8a^3$	**1**
(xi)	Which of the following indicates "segments of equal length"? (a)  (b)  (c)  (d) 	**1**
(xii)	If 'x' and 'y' vary inversely then the unknown value is: x 90 ? y 10 20 (a) 45 (b) 60 (c) 100 (d) 180	**1**
	SECTION – B **Q 2 to 7 is Objective type questions of 2 marks each.**	
2.	Find the cube root of 27×64	**2**
3.	Solve: $0.16\,(5x - 2) = 0.4x + 7$ **OR** If $4x - \frac{9}{2} = \frac{15}{2}$, then find the value of x.	**2**
4.	If Chameli had ₹ 600 left after spending 75% of her money, how much did she have in the beginning?	**2**
5.	What must be added to the sum of $x^2 - 4x + 7$ and $2x^2 + 5x - 9$ to get 0?	**2**
6.	Factorize: $x^4 - y^4$	**2**
7.	A rectangular piece of paper of dimensions 22cm × 10cm is rolled along its length to form a cylinder. Find the volume of cylinder formed.	**2**

SECTION – C **Q 8 to 10 is Short answer type questions of 3 marks each.**		
8.	Find the square root of 169 by repeated subtraction. **OR** Check whether 140 is a perfect square by repeated subtraction.	**3**
9.	In a scout camp, there is food provision for 300 cadets for 42 days. If 50 more cadets join the camp, for how many days will the provision last?	**3**
10.	A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and length is 1 m. **OR** Dinesh is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of a paint 100 m^2 of area is painted. How many cans of the paint will he need to paint the room?	**3**
SECTION – D **Q 11 to 13 is Long Answer type questions of 5 marks each.**		
11.	Write all the properties of a square. **OR** PQRS is a rhombus. Write any three properties of PQRS. The diagonals of PQRS meet at O. If PO = 4 cm and OQ = 3 cm, then find the value of (PR + SQ).	**5**
12.	Find the value of $(78)^2$ using a suitable identity. Also factorise $(4y^2 – 12y + 9)$. **OR** (a) Find the factors of $3m^2 + 9m + 6$. (b) Factorize the expression $39y^3(50y^2 – 98) \div 26y^2(5y + 7)$ and divide it as directed.	**5**
13.	(a) Subtract $3l(l – 4m + 5n)$ from $4l(10n – 3m + 2l)$ (b) Simplify: (a + b)(2a – 3b + c) – (2a – 3b)c	**5**
SECTION – E **Q 14 to 16 is Source based/Case study questions of 4 marks each.**		

14. On the occasion of festivity season, shopkeeper offers discount to attract the customers. Simran went to an electronic shop which gives 20% Diwali discount on the marked price of each item.

Based on the above information, answer the following questions:

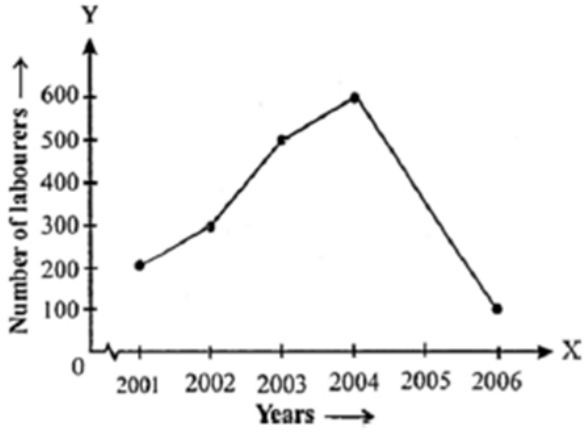
(i)	How will you find the sale price of an article if its marked price and discount (in ₹) on it are given?	**1**
(ii)	Find the sale price of a blender marked at ₹ 1200.	**1**
(iii)	Find the total discount, if she purchases an oven and LED marked at ₹ 7500 and ₹ 37500 respectively? **OR** Find the amount paid by her for purchasing a refrigerator and a music system marked at ₹ 45000 and ₹ 8000 respectively?	**2**

15. An aquarium is in the form of a cuboid whose external measures are 80 cm × 30 cm × 40 cm. The base is to be covered with black paper. The side faces and back face are to be covered with a paper of red colour. The cost of red colour paper is ₹ 4 per 100 cm^2.

Based on the above information, answer the following questions:

(i)	Find the desired area of the black paper.	**1**
(ii)	Find the area of paper required for back face.	**1**
(iii)	Find the total cost of paper required to cover the side faces. **OR** If the price of both colour papers is same, then find the total cost of the paper to be purchased required for covering the desired faces of the aquarium.	**2**

16. The following line graph shows the number of labourers hired for a project during various years.



Use the information given in the graph to answer the following questions:

(i)	In which year number of labourers was the minimum?	**1**
(ii)	Find the sum of the number of labourers hired in the years 2004 and 2006.	**1**
(iii)	Find the percentage rise in the number of labourers hired from 2001 to 2004. **OR** Find the percentage decrease in the number of labourers hired from 2003 to 2006.	**2**