# ARMY PUBLIC SCHOOL SHILLONG ANNUAL EXAMINATION 2022-23 SUBJECT: MATHEMATICS CLASS: VIII

# **Time: 2 Hour 30minutes**

# Maximum Marks: 80

## **General instructions:**

- All questions are compulsory. There are thirty-nine questions in all.
- The question paper is divided into five sections.
- Section A has 20 questions of 1 mark each, section B has 8 questions of 2 marks each, section C has 4 questions of 3 marks each, section D has 5 questions of 4 marks each and section E has 2 questions of 6 marks each.
- There is no overall choice in the question paper. However internal choice has been provided in few questions of section B,C and D.

# **SECTION: A**

# Fill in the blanks:

1)	The perimeter of a parallelogram whose parallel sides have lengths equal to 12 cm and 7cm 1					
	is					
	a) 21cm	b) 42cm	c) 19cm	d) 38cm		
2)	gives the number of times a particular entry occurs.				1	
	a) Organisation of data		b) Collection of Data			
	c) Representation of Data		d)Frequency distribution table			
3) A polynomial contains number of terms.			s.	1		
	a) One	b) Two	c) Three	d) Any		
4)	A cuboid has pairs of identical faces.			1		
	a) 2	b) 3	c) 4	d) 5		
5)	$100^0 + 20^0 + 5^0$	is equal to	·		1	
	a) 125	b) 25	c) 1/125	d) 3		
	State true or fa	alse:				
6)	Pictorial representation of data using symbols is known as Bar graph.			1		
7)	A square is a 3D shape.				1	
8)	If x and y are inversely proportional, then xy=constant.				1	
9)	A graph that displays data that changes continuously over periods of time is called				1	
	histograph.					
10)	A cone has one	vertex.			1	

# Choose the correct option:

11)	Each of the angles of a square is				1
	a) Acute angle	b) Right angle	c) Obtuse angle	d) 180 degree	
12)	The volume of a	cuboid with length,	breadth and heig	ht as $5x$ , $3x^2$ and $7x^4$ respectively is:	1
	a) 105x <sup>7</sup>	b) 105x <sup>2</sup>	c)105x <sup>4</sup>	d) 105x	
13)	The side-view of	a cone appears as:			1
	a) Circle	b) Square	c) Rectangle	d) Triangle	
14)	The area of a rhordiagonal.	mbus is 240 cm <sup>2</sup> an	nd one of the diag	onals is 16 cm. Find the other	1
	a) 16 cm	b) 20 cm	c) 30 cm	d) 36 cm	
15)	) The multiplicative inverse of $7^{-2}$ is:				1
	a) 7 <sup>2</sup>	b) 7	c) 1/7 <sup>2</sup>	d) 1/7	
16)	The common fact	tor of $a^3b^3$ and $ab^2$ i	s:		1
	a) $a^2b^2$	b) ab <sup>2</sup>	c) a <sup>2</sup> b	d) ab	
17)	The factorisation	h of $12a^2b+15ab^2$ given by the second se	ves:		1
	a) 3ab(4ab+5)	b) 3ab(4a+5b)	c) 3a(4a+5b)	d) $3b(4a + 5b)$	
18)	Which point lies	only on y-axis?			1
	a) (-2,0)	b) (2,0)	c) (0,-2)	d) (2,-2)	
19) The number 2146587 is divisible by:					1
	a) 7	b) 3	c) 11	d) None of the above	
20)	The generalised	form of 129 is:			1
	a) 100+90+2	b) 100+20+9	c) 100+2+9	d) None of the above	
			<b>SECTION: B</b>		
21)	A tetrahedron has 4 vertices and 6 edges. Find the number of faces it has.				
22)	Factorize : (10x –	$(-25) \div (2x - 5)$	OR $a^2$	+ 8a + 16	2

- 22) Factorize :  $(10x 25) \div (2x 5)$ OR  $a^2 + 8a + 16$
- 23) In the given figure, ABCD is a parallelogram. Find x.

2



- 24) A flooring tile has the shape of a parallelogram whose base is 24 cm and the corresponding 2 height is 10 cm. How many such tiles are required to cover a floor of area 1080 m<sup>2</sup>?
- 25) Find the value of :  $(3^{-1} \times 9^{-1}) \div 3^{-2}$ 2
- 26) Find x so that  $(-5)^{x+1} \times (-5)^5 = (-5)^7$ 2

2

2

3

3



- (a) What were the sales in (i) 2002 (ii) 2006?
- (b) Compute the difference between sales in 2002 and 2006.

#### 28) Find the values of P and Q from the given addition problem

	3	Р	4	3
+	4	<b>2</b>	7	Q
	7	9	1	7

## **SECTION: C**

- 29) Subtract: 3a(a+b+c) 2b(a-b+c) from 4c(-a+b+c)
- 30) In a stack there are 5 books each of thickness 20 mm and 5 paper sheets each of thickness 3 0.016mm. What is the total thickness of the stack?
- 31) A farmer has enough food to feed 20 animals in his cattle for 6 days. How long would the 3 food last if there were 10 more animals in his cattle?

#### OR

A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm, as shown in the diagram. What is the actual length of the bacteria? If the photograph is enlarged 20,000 times only, what would be its enlarged length?

32) Factorise :  $12xy(9x^2-16y^2) \div 4xy(3x+4y)$ 

### **SECTION : D**

- 33) The opposite angles of a parallelogram are  $(3x + 5)^{\circ}$  and  $(61 x)^{\circ}$ . Find the measure of 4 four angles.
- 34) A closed cylindrical tank of radius 7cm and height 5m is made from a sheet of metal. If the 4 breadth of the rectangular sheet is 10m, then find the length of the sheet.

OR

The internal measures of a room are  $12m \times 8m \times 4m$ . Find the total cost of white washing all four walls of a room if the cost of white washing is Rs 5 per sq m.

35) Draw a line passing through (2,3) and (3,2). Find the coordinates of the points at which this 4 line meets the x- axis and y- axis.

#### OR

Use the tables below to draw linear graphs: The number of days a hillside city received snow in different years.

Year	2006	2007	2008	2009
Days	10	8	14	9

- 36) Evaluate :  $(2xy) \times (x^2y/4) \times (x^2) \times (y^2)$  when x = 2, and y = -1.
- 37) Factorise the following using the identities :

a)  $25m^2 + 30m + 9$  b)  $9x^2y^2 - 16$ 

# **SECTION: E**

38) A school is an educational institution designed to provide learning spaces and learning (3+3) environments for the teaching of students under the direction of teachers. Sheela goes to school at an average speed of 12km/hr in 20min and Syna goes to school by motor cycle at an average speed of 40km/hr. Sheela wants to reach her school in 15minutes.



Answer the following questions :

- i) What should be the average speed of Sheela to reach school in 15min?
- ii) What is the distance of school from Sheela's house?
- 39) The following pie chart depicts the percentage of students, nationwide.

(3+3)



What is the percentage of : i) Indian students

ii) African students

4

4