ARMY PUBLIC SCHOOL SHILLONG
ANNUAL EXAMINATION (2022-23)
SUBJECT: MATHEMATICS
CLASS: VII

Time: 2 Hour 30 minutes   **Maximum Marks: 80**

General instructions:

- *All questions are compulsory. There are 39 questions in the 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 4 has questions 3 of marks each, section D has 5 questions of 4 marks each and section E has 2 questions of 6 marks.*
- *There is no overall choice in the question paper. However internal choice has been provided in few questions of section B,C & D.*

SECTION: A

Fill in the blanks:

1) Three times x is _____.   1

   a)3 + x   b)3x   c)6x

2) Standard form of 3/15 is _____.   1

   a)1/5   b) – 1/5   c) 2/30

3) The corners of a solid shape are called as _____.   1

   a) Faces   b) vertices   c) edges

4) Below the like terms are _____.   1

   a) $10x^2$, 7x   b) 9ab, 7ba   c) 7y, $7x^2$

5) 7^{-2} can be written as _____.   1

   a) 49   b)-49   c)1/49

State true or false:

6) x= 3 satisfies the equation x+ 3 = 0.   1

7) We can construct a ΔABC with angle A = 105°, angle B= 80° and angle C as 70°.   1

8) The distance around a circular region is known as its circumference.   1

9) A cube casts it's shadow in shape of a rectangle.   1

10) Plane figures are of 3- dimensions.   1

Choose the correct option:

15) Subtraction of xy+ $2x^2y$ from $2xy^2$ + xy gives.   1

    a)$4xy^3$ + xy   b) $-2x^2y$ + $2xy^2$ c)$4x^4y^4$

16) What is the base of the exponent 6^2 ?   1

    a)6   b)2   c)3

17) Express the number appearing in exponential form: Diameter of a circle is 0.000008   1

cm

a) 8×10^{-6} b) 8×10^{6} c) 8×10^{5}

18) An equilateral triangle has how many lines of symmetry?   1

a)3   b) 2   c) 4

19) The angle of turning during rotation is called.   1

a) angle of rotation   b) angle of symmetry   c) axis of rotation

20) Which of the following English letter has reflectional symmetry?   1

a) R   b) Q   c) O

SECTION: B

21) Add: 5m (3 – m) and $6m^2$ - 13m.   2

Or

Subtract 8m- 6mn from 5mn + 2m

22) Find the area of a square park whose perimeter is 320m.   2

23) Find the value of $(5)^3 \times (-5)^{-3}$ 2

24) Find the value of p when, 10p = 100   2

25) Which is greater 2/3 or 5/2?   2

26) Solve: 3/11 $\times$ 2/5   2

27) Simplify $(-4a)^{-7}$ 2

28) Draw and show how many lines of symmetry a square has.   2

SECTION:C

29) Solve $\frac{2b}{3}$ - 5 = 3   3

30) Construct an equilateral triangle of side 6.5 cm.   3

31) From the sum of $2y^2 + 3yz$, $-y^2$ -yz -z^2 and yz + $2z^2$ subtract $2y^2$ + yz.   3

32) Simplify: $(2 \times 3^4 \times 2^5) \div (9 \times 4^2)$ 3

Or

Find: $[(3^3)^2 \times 3^2] \div 3^7$

SECTION:D

33) Sam walks $\frac{2}{3}$ km from a place P, towards east and then from there $1\frac{5}{7}$ km towards west.   4

Where will he be now from P?

34) Construct a triangle XYZ if it is given that XY = 6cm, measures of angle ZXY = 30°   4

and measure of angle XYZ = 100°. Also give steps of construction.

Or

Construct a right-angled triangle LMN, right angled at M, such that LN = 5cm and MN

= 3cm. Also give steps of construction.

35) A path 2m wide runs along inside a square park of side 100m. Find the area of the path. Also find the cost of cementing the path at a rate of Rs 100 per m². — 4

    Or

A circular plate of radius 7cm is cut from a square piece of an aluminium sheet of side 12cm. what is the area of the left-over aluminium sheet? Also find the cost of painting the plate at a rate of Rs 10 per cm².

36) Express as product of prime factors only in exponential form: 729×64. — 4

37) What is the centre of rotation, order of rotation and angle of rotation of a circle and a semi-circle? — 4

SECTION:E

38) Three squares are attached to each other as shown in the figure given below. Each square is attached at the midpoint of the side of the square to its right. — 6(3+3)

6 m
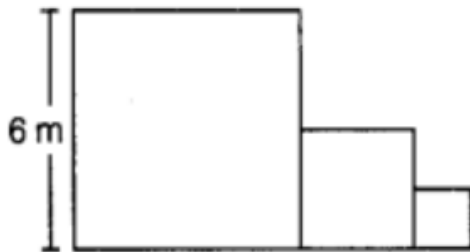
By looking at it answer the following questions:

a) What is the area of the three squares in total?

b) What is the outer perimeter of the given figure?

39) Riya wrote an algebraic expression. — 6(3+3)

$56t^3 + 12t^2 + 6t + 16s^2 + 2s + 106$

Observing the following expression answer the questions:

a) Which of the term has 6 as the coefficient and what are the factors of $56t^3$?

b) Riya said that there are two like terms in the algebraic expression. Is Riya correct? give reason.

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