KENDRIYA VIDYALAYA SANGATHAN, AGRA REGION

BLUE PRINT FOR MATHEMATICS CLASS VIII FOR SESSION ENDING EXAMINATION -2021-2022

S.NO.	NAME OF CHAPTER	Formation of number correctly [Objective Type] (1MARK)	Understanding basic concepts [Objective/MCQ Type] (1MARK)	ABILITY TO COMPUTE			PROBLEM SOLVING ABILITY			TOTAL WEIGHTAGE
				VSA (01 MARK)	SA (02 MARKS)	LA (03 MARKS)	VSA (01 MARK)	SA(02 MARKS)	LA(03 MARKS)	
1	Algebraic Expressions And Identities	1(1)	1(2)	----	2(1)	----	----	----	----	05
2	Visualising Solid Shapes	1(2)	1(1)	1(1)	----	----	1(1)	----	----	05
3	Mensuration	1(1)	1(2)	----	----	3(1)	----	----	----	06
4	Exponents And Powers	1(1)	1(1)	----	2(1)	----	1(1)	----	----	05
5	Direct And Inverse Proportion	1(2)	1(2)	----	----	----	----	----	----	04
6	Factorisation	1(1)	1(1)	----	----	----	1(1)	2(1)	----	05
7.	Introduction To Graphs	1(1)	----	1(1)	----	----	----	----	3(1)	05
8.	Playing With Numbers	1(1)	1(1)	1(1)	----	----	----	2(1)	----	05
TOTAL QUESTIONS		1(10)	1(10)	1(3)	2(2)	3(1)	1(3)	2(2)	3(1)	40(32)

[TOTAL 32 Questions: 01 mark (26 questions), 02 marks (04 questions) & 03 marks (02 questions) in 90 minutes]

NOTE – Questions to be framed to assess learning outcomes as per Alternative Academic Calendar (AAC) issued by NCERT and Creative & Critical Thinking (CCT) Skills of students.

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SAMPLE QUESTION PAPER (SEE TERM-II) 2021-2022

CLASS – VIII

SUBJECT – MATHEMATICS

TIME: 90 MINUTES **M.M.: 40**

GENERAL INSTRUCTION:

- All questions are compulsory.
- The question paper consists of 32 questions divided into four section – A, B, C and D
- Section A and B contains 10 questions of one mark each.
- Section C and D contains 6 questions out of which 3 questions of one mark each, 2 questions of two marks each and 1 question of 3 marks.
- Internal choice is given in 1 question of 2 mark and 1 question of 3 marks.
- Use of calculator is not allowed.

SECTION A

Q1 The product of 5x and 3y is _____ 1

Q2 A cube has _____ faces. 1

Q3 If the length and breadth of a rectangle are 15cm and 10cm, respectively, then calculate its area 1

Q4 $3^{-2} \times 3^{-5}$ = 1

Q5 If $x \propto y$ and $x_1 = 5$, $y_1 = 210$ and $x_2 = 2$, then find value of y_2 1

Q6 The scale of a map is given as 1:300. Two cities are 4 km apart on the map. The actual distance between them is _____ 1

Q7 Prisms and Pyramids can be classified as polyhedron. (TRUE/FALSE) 1

Q8 The factors of $6xy - 4y + 6 - 9x$ _____ 1

Q9 Find the figure obtained If we join (-3, 2), (-3, -3) and (-3, 4). 1

Q10 The usual form of 100 × 7 + 10 × 1 + 8 is = 1

Section B

Q11 The value of (x – y)(x + y) + (y – z)(y + z) + (z – x) (z + x) is: 1

(a) $x + y + z$ (b) $x^2 + y^2 + z^2$

(c) $xy + yz + zx$ (d) 0

Q12 Multiplication of monomials x^2, $(-x)^3$, $(-x)^4$ is equal to: 1

(a) x^9 (b) x^5

(c) x^7 (d) x^6

Q13 If a polyhedron has 6 vertices and 12 edges. What is the number of faces it has? 1

(a) 6 (b) 8

(c) 12 (d) 18

Q14 The area of a trapezium is 480 cm^2, the distance between two parallel sides is 15 cm and one of the parallel side is 20 cm. The other parallel side is: 1

(a) 20 cm (b) 34 cm

(c) 44 cm (d) 50 cm

Q15 If $(-3)^{m+1} \times (-3)^5 = (-3)^7$, then the value of m is: 1

(a) 5 (b) 7

(c) 1 (d) 3

Q16 6 pipes are required to fill a tank in 1 hour 20 minutes. If we use 5 such types of pipes, how much time it will take to fill the tank? 1

(a) 120 minutes (b) 96 minutes

(c) 80 minutes (d) 85 minutes

Q17 . A man walks 20 km in 5 hours. How much time it will take for him to walk 32 km? 1

(a) 3 Hours (b) 4 Hours

(c) 6 Hours (d) 8 Hours

Q18 The factors of $x^2 + xy + 8x + 8y$ are: 1

(a) $(x + y)(x + 8)$ (b) $(2x + y)(x + 8)$

(c) $(x + 2y)(x + 8)$ (d) $(x + y)(2x + 8)$

Q19 The area of a rhombus is 240 cm^2 and one of the diagonals is 16 cm. Find the other diagonal. 1

(a) 16 cm (b) 20 cm

(c) 30 cm (d) 36 cm

Q20 If the three digit number $24x$ is divisible by 9, the value of x is: 1

(a) 3 (b) 7

(c) 1 (d) 5

Section C

Q21 How many vertices does a pyramid with square base have? 1

Q22 Express the generalized form of 129 . 1

Q23 If the number 1220 is divided by 13, find the quotient and remainder. 1

Q24 Calculate the area of a rectangle whose length and breadths are given as $3x^2y$ meters and $5xy^2$ meters respectively. 2

Q25 Simplify and write in exponential form. 2

$$(-5)^2 \times (-5)^{-3}$$

OR

Express in standard form using exponents

(i) 0.00000000837

(ii) 837

Q26 A lawnmower takes 750 complete revolutions to cut grass on a field. Calculate the area of the field if the diameter of the lawnmower is 84 cm and the length is 1 m. 3

Section D

Q27 If F = 18 and V = 10, then find the value of E in Euler's formula 1

Q28 Express 8^{-4} as a power with the base 2. 1

Q29 Verify whether the following equation is correct. If incorrect rewrite it correctly. 1

$$(a+6)^2 = a^2 + 12a + 36$$

Q30 Factorize the following polynomials. 2

$$xy(z^2+1) + z(x^2+y^2)$$

Q31 Observe the following patterns: 2

$1 \times 9 - 1 = 8$

$21 \times 9 - 1 = 188$

$321 \times 9 - 1 = 2888$

$4321 \times 9 - 1 = 38888$

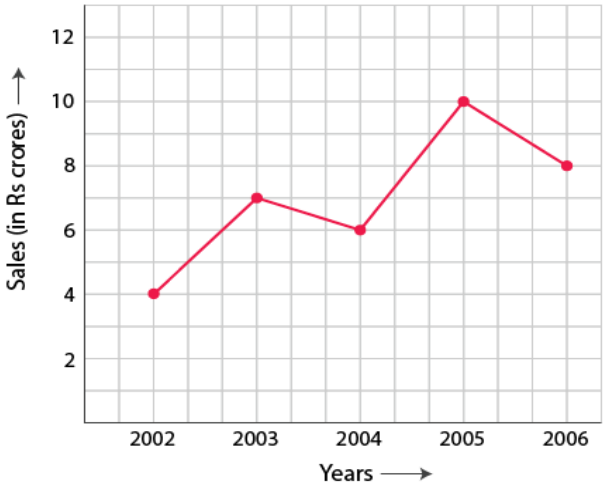
Find the value of $87654321 \times 9 - 1$

Q32 32. The following line graph shows the yearly sales figures for a manufacturing company. 3

(a) What were the sales in (i) 2002 (ii) 2006?

(b) What were the sales in (i) 2003 (ii) 2005?

(c) Compute the difference between sales in 2002 and 2006.



OR

Plot the following points and verify if they lie on a line.

A(1,1) ,B(1,2) , C(1,3) , D(1,4)

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SAMPLE QUESTION PAPER (SEE TERM-II) 2021-2022

CLASS – VIII

SUBJECT – MATHEMATICS

ANSWER KEY /MARKING SCHEME

TIME: 90 MINUTES **M.M.: 40**

SECTION A		
Q1	(5x)(3y) = 15xy	1
Q2	6 FACES	1
Q3	150 SQ M	1
Q4	3^{-7}	1
Q5	84	1
Q6	The distance between the two cities is 1200 km.	1
Q7	TRUE	1
Q8	6xy – 4y + 6 – 9x = 6xy – 4y – 9x + 6 = 2y (3x – 2) – 3 (3x – 2) = (3x – 2) (2y – 3)	1
Q9	Straight-line without passing through origin / Straight-line	1
Q10	100 × 7 + 10 × 1 + 8 = 700 + 10 + 8 = 718	1
Section B		
Q11	(d) 0	1
Q12	(a) x^9	1
Q13	(b) 8	1
Q14	(c) 44	1
Q15	(c) m = 1	1
Q16	(b) 96 minutes	1
Q17	(d) 8 Hours	1
Q18	(a) $(x + y)(x + 8)$	1

Q19	(c) 30 cm	1
Q20	(a) 3	1
	Section C	
Q21	5	1
Q22	100+20+9	1
Q23	dividend = pq + r 1220 = 13 × 93 + 11 Quotient = 93 0.5 Remainder = 11 0.5	1
Q24	Given, Length = $3x^2y$ m Breadth = $5xy^2$ m Area of rectangle = Length × Breadth 0.5 = $(3x^2y \times 5xy^2) = (3 \times 5) \times x^2y \times xy^2 = 15x^3y^3$ m^2 1.5	2
Q25	$(-5)^2 \times (-5)^{-3} = (-5)^{2+(-3)}$ 1 $= (-5)^{-1} = -\frac{1}{5}$ 1 OR (i) 0.00000000837 in standard form is equal to 8.37×10^{-9} 1 (ii) 837 in standard form is equal to 8.37×10^2 1	2
Q26	Given: length of lawnmower = 1m = 100cm 0.5 Its circumference = π × D = 22/7 × 84 = 264 cm 0.5 Length of field will be = 264 × 750 = 198000 cm 1 Here, the width of field = length of the lawnmower i.e. 100 cm 0.5 So, area of field = 198000 × 100 = 19,800,000 cm^2 0.5 Or, 1980 m^2	3
	Section D	

Q27	Solution: We know that $V + F – E = 2$ $\Rightarrow 10 + 18 – E = 2$ $\Rightarrow 28 – E = 2$ $\Rightarrow E = 28 – 2 = 26$ Hence, the required value of E = 26	1
Q28	Solution: We have $8 = 2 \times 2 \times 2 = 2^3$ $8^{-4} = (2^3)^{-4} = 2^{3\times(-4)} = 2^{-12}$	1
Q29	$(a + 6)^2 = a^2 + 12a + 36$ Here, LHS = $(a + 6)^2 = a^2 + 12a + 36$ Now, RHS = $a^2 + 12a + 36$ Hence, LHS = RHS.	1
Q30	Solution: (a) $xy(z^2 + 1) + z(x^2 + y^2)$ $= xyz^2 + xy + 2x^2 + zy^2$ 0.5 $= (xyz^2 + zx^2) + (xy + zy^2)$ $= zx(yz + x) + y(x + yz)$ 1 $= zx(x + yz) + y(x + yz)$ $= (x + yz)(zx + y)$ 0.5	2
Q31	From the pattern, we observe that there are as many eights in the result as the first digit from the right which is to be multiplied by 9 and reduced by 1. 1 $87654321 \times 9 – 1 = 788888888$ 1	2
Q32	Solution: (a) The sales in (i) 2002 were Rs. 4 crores and (ii) 2006 was Rs. 8 crores 1 (b) The sales in (i) 2003 was Rs. 7 crores and (ii) 2005 was Rs.10 crores. 1 (c) The difference of sales in 2002 and 2006 = Rs. 8 crores – Rs. 4 crores = Rs. 4 crores 1 OR For Correct Plotting Of Points 2 yes they lie on a line. 1	3