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.

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 expression $x^4y^3 - 3xyz + 2z^2$ is binomial. True/ False	1
Q2	A polyhedron has 8 faces, 6 vertices and 12 edges. (True / False)	1
Q3	Write the number of minimum faces in a polyhedron.	1
Q4	$1\,m^3 = \cdots \ldots \ldots \ldots L$	1
Q5	Express 0.000000003526 in Standard form	1
Q6	"If the number of articles purchased increases, the total cost also increases" is an example of direct proportion? (True / False)	1
Q7	"The time taken for a fixed journey and the speed of the vehicle" is an example of indirect proportion? (True / False)	1
Q8	Simplify $20ab(a^2 - b^2) \div 5b(a - b)$	1
Q9	Write the ordinate of the point whose co-ordinate is $(3, -2)$	1
Q10	Find value of A so that 1 A is true.	1

$$
\begin{array}{r}
1 \quad A \\
\times \quad \underline{\quad A \quad} \\
\underline{9 \quad A \quad}
\end{array}
$$

## Section B

Q11 Expression (3x − 4y) (3x + 4y) is

    (a) $9x^2 - 16y^2$ (b) $3x^2 - 4y^2$ 1

    (c) $9x^2 - 4y^2$ (d) $3x^2 - 16y^2$

Q12 Value of the expression $6xy(x - y)$ when $x = 3 \ and \ y = 2$ is

    (a) 6   (b) 12   1

    (c) 18   (d) 36

Q13 Which of the following is not a polyhedron?

    (a) pyramid   (b) cuboid   1

    (c) triangular prism   (d) cone

Q14 The area of the rhombus whose diagonals are 8 cm and 12 cm is

    (a) $96 \ cm^2$ (b) $48 \ cm^2$ 1

    (c) $24 \ cm^2$ (d) $84 \ cm^2$

Q15 If each edge of a cube is doubled, Then its surface area increase

    (a) 2 times   (b) three times   1

    (c) 4 times   (d) 6 times

Q16 Value of $(2^5 - 5^2 + 3^{-2} + 2^{-3})^0$ is

    (a) 0   (b) 1   1

    (c) 2   (d) 3

Q17 A loaded bus travels 28 km in 50 minutes. If the speed remains the same, the

distance travelled by bus in 5 hours is   1

    (a) 186 km   (b) 168 km

    (c) 84 km   (d) 93 km

Q18 A car takes 2 hours to reach a destination by travelling at the speed of 60km/h.

How long will it take when the car travels at the speed of 80km/h?

    (a) 60 minutes   (b) 30 minutes   1

    (c) 80 minutes   (d) 90 minutes

Q19 Factorization of $a^4 - b^4$ is

    (a) $(a - b)(a + b)(a^2 + b^2)$ (b) $(a - b)(a + b)(a^2 - b^2)$

   (c) $(a^2 + b^2)(a^2 + b^2)$ (d) $(a^2 - b^2)(a^2 - b^2)$ 1

Q20 If number 21y5 is a multiple of 9, where y is a digit, then y is

    (a) 0   (b) 1   1

    (c) 2   (d) 3

Section C

Q21 If for a polyhedron $F = 10, V = 8,$ then calculate value of E 1

Q22 From the given figure, what is the co-ordinate of point "C".

    1
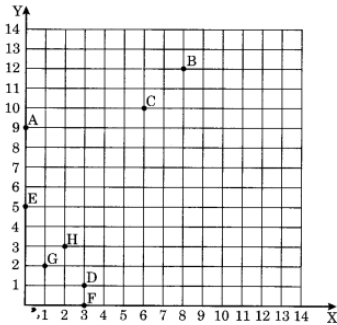
Q23 If three-digit number 21y is a multiple of 3, then what is the minimum value of   1

digit y?

Q24 Using identity, evaluate 97^2 2

Q25 Evaluate : $\dfrac{15^5 \times 6^5}{3^{10} \times 2^5}$ 2

Q26 Find the TOTAL area of the following field. All dimensions are in meters.
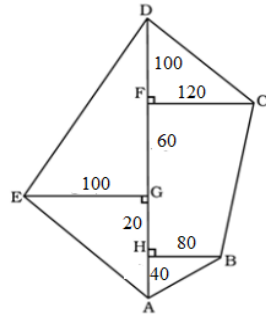
    3

OR

Rukshar painted the outside of the cabinet of measure $1m$1m x 2 m x 1.5 m. Find the surface area she needed to paint except the bottom of the cabinet.
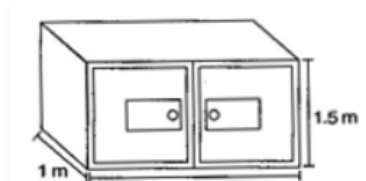
Section D

Q27   Find the number of vertices of pentagonal prisms.   1

Q28   Find the value of $2^3 \times (2^0 + 2^{-1})$ 1

Q29   Factories: $4p^2 - 9q^2$ 1

Q30   Simplify $(5x^2 + 25x + 20) \div 5(x + 2)$ 2
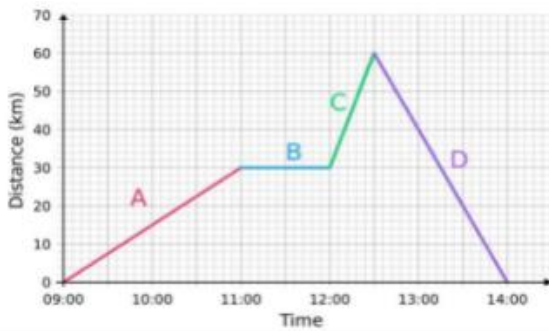
<div align="center">OR</div>

   Find the error in the given statement and also write it correctly.
$(a-4)^2 = a^2 - 16$

Q31   Find the value of 'A' and 'B' so that   2

$$\begin{array}{r} 3 \quad A \\ + \ 2 \quad 5 \\ \hline B \quad 2 \\ \hline \end{array}$$

Q32   The graph below describes a journey of Rohan that has several parts to it, each   3
represented by a different straight line. Study the graph and answer the following
questions:

(i)   The speed between 9:00 to 11:00 is

(a) 10 km/ hour   (b) 15 km/hour

(c) 20 km/hour   (d) 25 km/hour

(ii)   Between which period of time Rohan was not travelling any distance?

(a) 11:00 – 12:00   (b) 12:00 – 13:00

(c) 13:00 – 14:00   (d) None of these

(iii)   What distance did he travel between 12:00 to 12:30?

(a) 10 km   (b) 20 km

(c) 30 km   (d) 40 km

"KENDRIYA VIDYALAYA SANGTHAN, AGRA REGION"

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

CLASS – VIII

SUBJECT – MATHEMATICS

ANSWER KEY / MARKING SCHEAME

	SECTION A	
Q1	False	1
Q2	True	1
Q3	4	1
Q4	1000	1
Q5	3.526×10^{-9}	1
Q6	True	1
Q7	True	1
Q8	$4a(a + b)$	1
Q9	- 2	1
Q10	A = 6	1
	SECTION B	
Q11	(a)$9x^2 - 16y^2$	1
Q12	(d) 36	1
Q13	(d) cone	1
Q14	(b) 48 cm^2	1
Q15	(c) 4 times	1
Q16	(b) 1	1
Q17	(b) 168 km	1
Q18	(d) 90 minutes	1
Q19	(a) $(a - b)(a + b)(a^2 + b^2)$	1
Q20	(b) 1	1
	SECTION C	
Q21	16	1
Q22	(6, 10)	1
Q23	0	1

Q24	$97^2 = (100 - 3)^2$	0.5
	$= 100^2 + 3^2 - 2 \times 100 \times 3$	0.5
	$= 10000 + 9 - 600$	0.5
	$= 9409$	0.5
Q25	$$\frac{(3 \times 5)^5 \times (2 \times 3)^5}{3^{10} \times 2^5}$$	0.5
	$$\frac{3^5 \times 5^5 \times 2^5 \times 3^5}{3^{10} \times 2^5}$$	0.5
	$$\frac{3^{10} \times 2^5 \times 5^5}{3^{10} \times 2^5}$$	0.5
	$3^{10-10} \times 2^{5-5} \times 5^5 = 3^0 \times 2^0 \times 5^5 = 5^5$	0.5
Q26	Total area $= ar\ \Delta DFC + ar\ \|FCBH + ar\ \Delta ABH + ar\ \Delta AGE + ar\ \Delta EGD$	
	$$ar\ \Delta DFC = \frac{1}{2} \times 100 \times 120 = 6000\ sq\ m$$	0.5
	$$ar\ \|FCBH = \frac{80 \times (120 + 80)}{2} = 8000\ sq\ m$$	0.5
		0.5
	$$ar\ \Delta ABH = \frac{1}{2} \times 80 \times 40 = 1600\ sq\ m$$	
	$$ar\ \Delta AGE = \frac{1}{2} \times 100 \times 60 = 3000\ sq\ m$$	0.5
	$$ar\ \Delta EGD = \frac{1}{2} \times 100 \times 160 = 8000\ sq\ m$$	0.5
	Total area $= 6000 + 8000 + 1600 + 3000 + 8000 = 26600$ sq m	0.5
	OR	
	Total Area to be painted = Lateral Surface area + Area of top	0.5
	$= 2h\ (l+b) + lb$	1
	$= 2 \times 1.5(1+2) + 1 \times 2$ sq.m	1
	$= 11$ sq.m	0.5
SECTION D		
Q27.	Number of vertices = 2 x number of sides	0.5
	= 2 x 5 = 10	0.5
Q28	$$8 \times \left(1 + \frac{1}{2}\right)$$	0.5
	$$= 8 \times \frac{3}{2} = 12$$	0.5
Q29	$(2p)^2 - (3q)^2$	0.5

	$= (2p + 3q)(2p - 3q)$		0.5
Q30	$5(x^2 + 5x + 4) \div 5(x + 4)$		0.5
	$= 5(x^2 + x + 4x + 4) \div 5(x + 4)$		0.5
	$= 5\{x(x + 1) + 4(x + 1)\} \div 5(x + 4)$		0.5
	$= 5(x + 1)(x + 4) \div 5(x + 4) = (x + 1)$		0.5
	OR		
	Error : Identity $(a-b)^2$ is not used correctly**.**		1
	Correct statement : $(a-4)^2 = a^2 -8a+16$		1
Q31	$A + 5 = 7 + 5 = 12 \rightarrow A = 7$		1
	$3 + 2 + 1 = 6 = B$		1
Q32	(i) (b) 15 km/hour		1
	(ii) (a) 11:00 – 12:00		1
	(iii) (c) 30 km		1

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