Class: **VIII**   **Sub: MATHEMATICS**   **Max Marks: 80**

Instructions:

Section A: Multiple Choice Question (Q.1 to Q.5) & Source-based question (Q.6)

Section B: Short Answer Questions of 2 marks each (Q.7 to Q.15)

Section C: Long Answer Questions (Type – 1) of 3 marks each (Q.16 to Q.23)

Section D: Long Answer Questions (Type– 2) (Q.24 to Q.28) &Case study Question (Q.29 & Q.30) 4 marks each

Section A: Multiple Choice Question (Q.1 to Q.5) of **1** mark each								
Q1.	Find the multiplicative inverse of $\dfrac{-6}{5}$							
	A	$\dfrac{-1}{5}$	**B**	$\dfrac{5}{6}$	**C**	$\dfrac{6}{5}$	**D**	$\dfrac{-5}{6}$
Q2.	Find the product of $2y$ and $(3y$ -7)							
	A	$9y^2 - 14$	**B**	$6y^2 - 14y$	**C**	$y^2 - 14y$	**D**	$14y- 2$
Q3.	Factorise: $9xy^2+ 45y$							
	A	$9y(xy + 5)$	**B**	$9y(xy$ - 5)	**C**	$9y(y + 5)$	**D**	$9(xy + 5)$
Q4.	Sam purchased a table fan for ₹2,500 and sold it for ₹2,000. Find the loss%.							
	A	30%	**B**	20%	**C**	50%	**D**	25%
Q5.	A varies directly as B, and A is equal to 5 when B = 35. Find A when B = 63.							
	A	19	**B**	7	**C**	8	**D**	9

Q6.	**Source-based questions:**
	The histogram is given alongside shows the distribution of the ages (in years) of 22 workers in the garment factory.

I	What is the most common age group?							
A	25 - 30	**B**	30 - 35	**C**	35 - 40	**D**	40 - 45

II	What is the number of workers who is more than 25 but less than 30 years?							
A	4	**B**	5	**C**	2	**D**	6

III	What is the class size?							
A	5	**B**	10	**C**	15	**D**	25

IV	How many workers are 40 years or older?							
A	9	**B**	8	**C**	15	**D**	14

V	Which age group has the least no of workers?							
A	40 - 45	**B**	30 - 35	**C**	35 - 40	**D**	50 - 55

Section B: Short Answer Questions (Type – 1) of **2** marks each (Q.7 to Q.15)

Q7.	Obtain the volume of a rectangular box with length, breadth and height $xy, 2x^2y,$ and $2xy^2$ respectively.
Q8.	Swati has a road map with a scale of 1 cm representing 12 km. She drives on the road for 72 km. What would be her distance covered on the map?
Q9.	A farmer has enough food to feed 20 animals in his farm for 6 days. How long would the food last if there were 10 more animals coming to his farm?
Q10.	Find the value of 123 × 125 using the identity.
Q11.	Factorise the given expression: 15xy − 6x + 5y − 2
Q12.	Carry out the following divisions. $81x^4yz \div 27xy$

Q13.	The cost price of a pair of roller skates at a shop was ₹450. A discount of 5% was offered on it. Find the bill amount.
Q14.	Radwan bought an air cooler for ₹ 3,300 including a tax of 10%. Find the price of the air cooler before VAT was added.
Q15.	Find the value using distributive property: $[\frac{3}{5} \times \frac{-2}{7}] + [\frac{3}{5} \times \frac{3}{14}]$

Section C: Long Answer Questions (Type – 1) of **3** marks each (Q.16 to Q.23)

Q16.	The pie chart shows each student's subject of interest in a class. Answer the following question concerning the given pie diagram.
	
	  i) If 30 students show their interest in history, how many total students were surveyed?
	  ii) Which subject is like the most?
	  iii) How many students are interested in geography?
	
	History: 8.0% Geography: 24.0% Mathematics: 20.0% Computer: 12.0% Science: 36.0%

Q17.	A car takes 2 hours to reach a destination by travelling at the speed of 50 km/hr. How long will it take when the car travels at the speed of 80 km/hr.? Also, if the 4 hours is taken by a car then find the speed of a car.
Q18.	Use a suitable identity to get the product. (2x + 3y) (2x + 3y)
Q19.	Find the product Using a suitable identity. (4x + 5) (4x − 1)
Q20.	Divide the given polynomial by the given monomial. $(5x^2zy^2 − 6xy^3 + 9xy) ÷ 3xy$
Q21.	Find the amount and compound interest for ₹7200 for 2 years at 8% p.a. compounded yearly.
Q22.	Factorise: $y^2 + 8y + 15$
Q23.	Represent given rational numbers $\frac{-2}{5}$, 0 , $\frac{1}{5}$, $\frac{3}{5}$, 1 on a number line.

	Section D: Long Answer Questions (Type – 2)
	(Q.24 to Q.28) & Case study (Q.29 &30) of **4** marks each

Q24.	Write four rational numbers between $\dfrac{3}{-2}$ and $\dfrac{4}{-3}$.

Q25.	Complete the table inverse variation

X	30	A	10	C	D
Y	5	3	B	75	50

Q26.	Simplify the expressions:
	(i) Evaluate them as directed: $3x \times (2x^2 - 3) + 2$ for x = 2,
	(ii) Add: 5m (3 – m) + 5 and 6m² – 13m –7

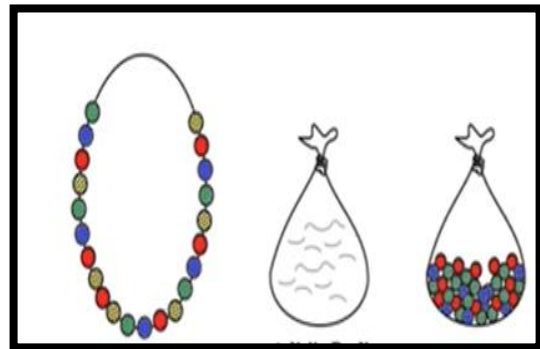| **Q27.**	Plot the following points and verify if they lie on a line.
	(i) (5,3), (2,6), (4,4), and (1,7)

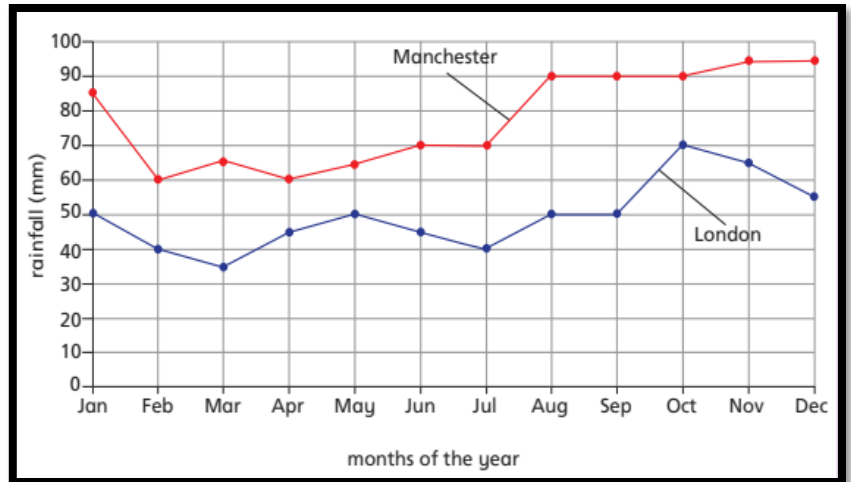| **Q28.**	Reeta invests ₹12,000 at the rate of 5% per annum for 2 years at simple interest in bank A and Megha invests the same amount for the same time period at 5% per annum compounded annually in bank B. Which bank offers more interest?

Q29.	**Case study 1:** Dulari runs a handicraft shop in Jaipur. She makes beautiful necklaces using colourful beads in Potli (bag). She counted the beads and found that there were 8 reds, 6 green and 14 blue for making necklace.
	Answer the following questions
	1. Find the probability of a green bead?
	2. Find the probability that bead drawn by she is not of green bead?
	3. Find the probability that she draws either a green or a blue bead?
	4. Find the probability of a red bead?

Q30. | **Case study 2:** The average rainfall in London and Manchester is recorded for a year. This graph shown in the figure.

Answer the following questions

i) How many millimeters of rain falls in London in July?

ii) When there was least rain fall in Manchester?

iii) In January, how much more rainfall is there in Manchester than London?

iv) How many months does it rain more than 50 mm in London?

ANSWER KEY

Q.1	D	Q.2	B	Q.3	A
Q.4	B	Q.5	9	Q. 6	I-C, II-A, III -A , IV - B, V- D
Q.7	$4x^4y^4$	Q.8	6 cm	Q.9	4 DAYS
Q.10	15,375	Q.11	$(5y-2)(3x+1)$	Q.12	$3x^3z$
Q.13	₹427.50	Q.14	₹ 3,000	Q.15	$\dfrac{c\,3}{70}$
Q.16	i-375 ii- SCIENCE iii-90	Q.17	3.2 hr, 100km/h	Q.18	$4x^2+12xy+9y^2$
Q.19	$16x^2+16x-5$	Q.20	$5/3\ xzy-2y^2+3$	Q.21	₹8398.08 ₹1198.08
Q.22	$(y+3)(y+5)$	Q.23	-	Q.24	$\dfrac{-87}{60},\dfrac{-89}{60},\dfrac{-88}{60},\dfrac{-83}{60}$
Q.25	A=50, B= 15, C=2,D= 3	Q.26	(i) $6x^3-9x+2$, 32 (ii) $2m+5m^2-2$	Q.27	-
Q.28	Bank A SI =₹1,200 Bank B CI = ₹1,320 , Bank B	Q.29	1. 3/14 2. 11/14 3. 5/7 4. 2/7	Q.30	i) 40mm ii) Feb , Apr iii) 35mm iv) Oct ,Nov , Dec

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