SUBJECT: **MATHEMATICS**                                                                 TIME : **3 Hours**

CLASS : **VIII**                                                                                      Max. Marks : **90**

### SET B

General Instructions :-

1. All questions are compulsory. However, internal choice has been given for one question in each section.
2. The question paper consists of 34 questions divided into 4 sections, Section A,          Section B,          Section C          and   Section   D.
3. Section A contains 8  MCQ  of 1 mark each, Section B contains 6 qns of 2 marks each , Section C contains 10 qns of 3 marks each and Section D contains 10 qns of 4 marks each.

### <u>SECTION- A (1 X 8 = 8)</u>

<u>Choose the correct answer</u>

1.   Which is the true statement
     a) $CP - Loss = SP$    b) $SP - CP = Loss$   c) $SP - Loss = CP$   d) $CP + Loss = SP$.

2.   Capacity of a cubical vessel of edge   $40cm$ is _____.
     a) $64\ litres$               b) $640\ litres$                    c) $1600\ litres$              d) $6400\ litres$

3.   Factorisation of  $P^2 + p - 6$  is
     a) $(p - 3)(p - 2)$      b) $(p - 1)(p + 6)$   c) $(p + 2)(p - 3)$      d) $(p - 2)(p + 3)$

4.   Which point lies on  Y-axis.
     a) $(4, 0)$        b) $(0, 7)$        c) $(7,7)$              d) $(4,4)$.

5.   What is the probability to get a Red Ace from a well shuffled pack of 52 playing cards?
     a) $\dfrac{1}{52}$          b) $\dfrac{1}{26}$          c) $\dfrac{1}{13}$          d) $\dfrac{1}{4}$

6.   Product of $(2 - x)$ and $(-x + 2)$ is
     a) $x^2 - 2^2$     b) $(x + 2)^2$    c) $2^2 - x^2$              d) $(2 - x)^2$

7.   If two equal sides of an isosceles triangle are $6x - 7$ and $5x + 1$, then $x = $ __
     a) 1               b) 8                   c) 7                 d) 10

8    If two quantities $x$ and $y$ are in direct proportion, then
     a) $x = ky$      b) $xy = k$       c) $x - y = k$       d) none of these.

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## SECTION- B (2 X 6 = 12)

9. The diagonals of a rhombus are 7.5 $cm$ and 12 $cm$. Find its area.

10. Plot these points on a graph sheet.
    A (0, 3),      B (1, 4),        C (2, 5),        D (6, 2)

11. If the thickness of 500 sheets of paper is 4 cm then what would be the thickness of 200 sheets of the same paper.

12. The list price of a $TV$ is $Rs$ 12,000. If the rate of sales tax is 8%, calculate the total amount for purchasing the $TV$.

13. Find the product of $(z + 2)(z^2 - 2z + 4)$

$$OR$$

13. Use a suitable identity to get the product of $(2x + 5y)(2x + 3y)$.

14. Read the following grouped frequency table and answer the questions.

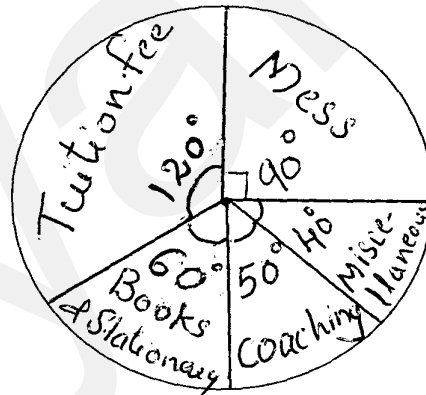| Class Interval | 0-25 | 25-50 | 50-75 | 75-100 | 100-125 | 125-150 |
|---|---|---|---|---|---|---|
| Frequency | 5 | 2 | 7 | 3 | 12 | 4 |

$i$)    What is the size of each class interval ?
$ii$)   Which class has the highest frequency ?
$iii$)  What is the upper limit of the class 75-100 ?
$iv$)   What is the frequency of the lowest class ?

## SECTION- C (3 X 10 = 30)

15. Show that          $(3x + 2y)^2 - 24xy = (3x - 2y)^2$.

16. The sum of three consecutive multiples of 9 is 324. Find these multiples.

17. A mobile is sold at $Rs$ 7225 after allowing a discount of 15%. Find its marked price.

$$OR$$

17. Find the amount to be paid at the end of 1 year on $Rs$ 16000 at 5% per annum compounded half yearly.

18. If 15 men can paint the walls of a building in 16 days, in how many days will 20 men complete the work.

19. Capacity of a cylindrical tank is $924\ m^3$ and radius of its base is $7m$. Find its height

20. Add $\quad 4y\,(3y^2 + 5y - 7)\quad$ and $\quad 2\,(y^3 - 4y^2 + 5)$.

21. The area of a trapezium is $135\ cm^2$. If one of its parallel sides is $15cm$ and the distance between the parallel sides is $10cm$, then find the length of the other parallel side.

22. Factorise the expression and divide as directed : $\quad (2\,y^2 - 14y + 24) \div (2y - 8)$

23. The given Pie-chart represents the monthly expenditure of a student residing in a hostel. If he spends $Rs\ 3000$ on tuition fees, then
    a) What is the total monthly expenditure?
    b) How much does he spend on books and stationary?



24. A car travels $210\ km$ in 2 hours. How far it can travel in 80 minutes?

## SECTION- D (4 X 10 = 40)

25. Factorise $\quad (x + y)^4 - z^4$

26. The ages of Ayesha and Reeba are in the ratio 3:4. Eight years from now the ratio of their ages will be 5:6. Find their present ages

27. Factorise:-
    i) $\;5y^2 + 2yz - 20y - 8z$

    ii) $\;16\,p^2 + 40\,pq + 25q^2$ (*Use a suitable identity*)

28. Evaluate using suitable identities
    i) $\;54^2 - 46^2$           ii) $\;102 \times 103$

29. Rahul bought two watches for $Rs$ 2400 each. He sold one of them at a profit of 10% and the other at a loss of 4%. Find his total gain or loss percent.

30. The sum of the digits of a two digit number is 9. The number obtained by reversing the digits is 9 less than the original number. Find the original number.

*OR*

30. Solve: $\dfrac{3x+5}{5} + \dfrac{2-x}{3} = \dfrac{5x-7}{6}$

31. The internal measures of a cuboidal room are 14 m X 10 m X 8 m. Find the total cost of whitewashing the four walls and ceiling of the room, if the cost of whitewashing is $Rs$ 15 per $m^2$.

32. 150 students appeared for the $CBSE$ examination of $X^{th}$ class. The given table shows their score in percentage wise. Draw a histogram to represent the data.

| Marks (in percentage) | 0 – 20 | 20 – 40 | 40 – 60 | 60 – 80 | 80 – 100 |
|---|---|---|---|---|---|
| No of students | 5 | 40 | 50 | 30 | 25 |

$i$) How many students scored 60% and above ?
$ii$) How many students scored less than 40% ?

33. Aparna borrowed $Rs$ 8000 from a bank at 12% per annum for 3 years at simple interest and Nida borrowed the same amount for the same time period at 10% per annum compounded annually. Who paid more interest ?

34. The following table gives the quantity and cost of an item.

| Quantity (in kg) | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| cost in Rs | 30 | 60 | 90 | 120 | 150 |

Plot a linear graph to show the data and use it to find

$i$) The quantity of the item, which can be bought for $Rs$ 75.
$ii$) Find the cost of $3\frac{1}{2}$ $kg$ of the item.