

SUBJECT: MATHEMATICS

CLASS : VIII

MAX. MARKS : 40

DURATION : 1½ hr

SECTION – A

Questions 1 to 6 carry 1 mark each.

- Sum of $a - b + ab$, $b + c - bc$ and $c - a - ac$ is
(a) $2c + ab - ac - bc$ (b) $2c - ab - ac - bc$ (c) $2c + ab + ac + bc$ (d) $2c - ab + ac + bc$
- Area of a rectangle with length $4ab$ and breadth $6b^2$ is
(a) $24a^2b^2$ (b) $24ab^3$ (c) $24ab^2$ (d) $24ab$
- Volume of a rectangular box (cuboid) with length = $2ab$, breadth = $3ac$ and height = $2ac$ is
(a) $12a^3bc^2$ (b) $12a^3bc$ (c) $12a^2bc$ (d) $2ab + 3ac + 2ac$
- Product of $6a^2 - 7b + 5ab$ and $2ab$ is
(a) $12a^3b - 14ab^2 + 10ab$ (b) $12a^3b - 14ab^2 + 10a^2b^2$
(c) $6a^2 - 7b + 7ab$ (d) $12a^2b - 7ab^2 + 10ab$
- If we subtract $-3x^2y^2$ from x^2y^2 , then we get
(a) $-4x^2y^2$ (b) $-2x^2y^2$ (c) $2x^2y^2$ (d) $4x^2y^2$
- In the below question, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as
Assertion (A): The terms of the expression $3x^2y - 5xy + 7x$ are $3x^2y$, $-5xy$, and $7x$.
Reason (R): Terms in an algebraic expression are separated by addition or subtraction signs.
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

SECTION – B

Questions 7 to 9 carry 2 marks each.

- Simplify $3x(4x - 5) + 3$ and find its values for (i) $x = 3$ (ii) $x = 1/2$
- (a) Add: $p(p - q)$, $q(q - r)$ and $r(r - p)$
(b) Add: $2x(z - x - y)$ and $2y(z - y - x)$
- Subtract: $3l(l - 4m + 5n)$ from $4l(10n - 3m + 2l)$

SECTION – C

Questions 10 to 13 carry 3 marks each.

- What should be subtracted from $x^4 + 2x^2 - 3x + 7$ to get $x^3 + x^2 + x - 1$?

11. Subtract $4p^2q - 3pq + 5pq^2 - 8p + 7q - 10$ from $18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$
12. Multiply (i) $(x - 4)$ and $(2x + 3)$ (ii) $(x - y)$ and $(3x + 5y)$
13. Simplify $(a + b)(2a - 3b + c) - (2a - 3b)c$.

SECTION – D

Questions 14 to 16 carry 4 marks each.

14. Simplify: (i) $(a + b)(c - d) + (a - b)(c + d) + 2(ac + bd)$
(ii) $(x + y)(2x + y) + (x + 2y)(x - y)$
15. Obtain the product of (i) xy, yz, zx (ii) $a, -a^2, a^3$ (iii) $2, 4y, 8y^2, 16y^3$ (iv) $a, 2b, 3c, 6abc$
16. Obtain the volume of rectangular boxes with the following length, breadth and height, respectively.
(i) $5a, 3a^2, 7a^4$ (ii) $2p, 4q, 8r$ (iii) $xy, 2x^2y, 2xy^2$ (iv) $a, 2b, 3c$

SECTION – E (Case Study Based Question)

Question 17 carry 4 mark

17. A playground is in shape of a square. The area of the square PQRS is 256 m^2 with each side $(x + 2)\text{m}$. One day Suraj along with his two friends Ajay and Aman went to play there with bicycle. Someone stole Suraj bicycle but Ajay and Aman helped him by contributing ₹ $(4a + 60)$ and ₹ $(6a + 10)$ respectively, to buy a new bicycle. The cost of bicycle was ₹ 4200.



On basis of this information given in passage answer following questions.

- (a) Find the value of x . (1)
(b) What is the value of a ? (1)
(c) What was the amount given by Ajay and Aman to Suraj? (1)
(d) What is the perimeter of the playground? (1)