

SUBJECT: MATHEMATICS

CLASS : VIII

General Instructions:

- (i). All questions are compulsory.
 - (ii). This question paper contains 20 questions divided into five Sections A, B, C, D and E.
 - (iii). **Section A** comprises of 10 MCQs of 1 mark each. **Section B** comprises of 4 questions of 2 marks each. **Section C** comprises of 3 questions of 3 marks each. **Section D** comprises of 1 question of 5 marks each and **Section E** comprises of 2 Case Study Based Questions of 4 marks each.
 - (iv). There is no overall choice.
 - (v). Use of Calculators is not permitted
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SECTION – A

Questions 1 to 10 carry 1 mark each.

- 1. Which expression always represents a multiple of 9?
(a) $9n$ (b) $6n + 3$ (c) $3n$ (d) $9n + 1$
- 2. A number is written as $5k + 2$. What remainder will it leave when divided by 5?
(a) 0 (b) 1 (c) 2 (d) 5
- 3. If a number is divisible by both 4 and 6, then it must be divisible by
(a) 8 (b) 12 (c) 18 (d) 24
- 4. Which number will leave the same remainder as 983 when divided by 9?
(a) 2 (b) 11 (c) 20 (d) 8
- 5. Which of the following numbers is divisible by 11?
(a) 57299 (b) 38461 (c) 91827 (d) 74352
- 6. The digital root of 46899 is
(a) 9 (b) 3 (c) 6 (d) 8
- 7. Which of the following numbers is always odd?
(a) $2n + 1$ (b) $4n$ (c) $6n$ (d) $8n + 2$
- 8. Which of the following numbers is divisible by both 3 and 11?
(a) 235 (b) 190 (c) 363 (d) 275

In the following questions 9 and 10, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (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.

9. Assertion (A): Every multiple of 10 is divisible by 5.

Reason (R): $10 = 5 \times 2$.

10. Assertion (A): If the sum of digits of a number is divisible by 3, then the number is divisible by 3.

Reason (R): Every place value of a number differs from its digit by a multiple of 3.

SECTION – B

Questions 11 to 14 carry 2 marks each.

11. Write the general form of a number divisible by 8 and give two examples.
12. Prove that the sum of two multiples of 5 is also a multiple of 5.
13. Find the remainder when 735 is divided by 9.
14. Write two numbers that leave remainder 3 when divided by 4.

SECTION – C

Questions 15 to 17 carry 3 marks each.

15. Find the smallest number that leaves remainder 1 when divided by 4 and remainder 3 when divided by 6.
16. Explain why divisibility by 9 implies divisibility by 3, but not vice versa.
17. Show that the product of three consecutive numbers is divisible by 6.

SECTION – D

Questions 18 carry 5 marks each.

18. Explain the divisibility test for 9 using place-value expansion.

SECTION – E (Case Study Based Question)

Question 19 to 20 carry 4 mark

19. Case Study-1: Digital Root Game

In a digital root game, the teacher wrote several large numbers on the board and asked students to find their digital roots. Ramesh noticed that whenever the digital root was 9, the number was divisible by 9. This observation helped students verify divisibility quickly without long division. The activity strengthened their understanding of place value and digit behaviour.



- (a) Find the digital root of 99972.
- (b) Is the number divisible by 9?
- (c) Explain the reason behind this rule.
- (d) Give another example of a number with digital root 9.

20. Case Study-2: Classroom Challenge

During a classroom challenge, students were asked to form numbers that leave specific remainders when divided by given numbers. Sita formed numbers that left remainder 3 when divided by 4 and checked her answers by division. She learned how algebraic expressions like $4k + 3$ help represent such numbers and allow easy verification.



- Write the algebraic form of numbers leaving remainder 3 when divided by 4.
- Write two such numbers.
- Verify one of them by division.
- Write a similar form for numbers leaving remainder 2 when divided by 5.

