

CHAPTER 07 PROPORTIONAL REASONING- I (Ganita Prakashan)

SUBJECT: MATHEMATICS

MAX. MARKS : 40

CLASS : VIII

DURATION : 1½ hr

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. Two display boards have dimensions (360 cm, 240 cm) and (150 cm, 100 cm). Choose the correct option.
(a) Display boards are distorted (b) Only widths are proportional
(c) Display boards are similar (d) Ratios are unequal
2. Which ratio is proportional to 96 : 144?
(a) 4 : 5 (b) 8 : 12 (c) 12 : 20 (d) 18 : 30
3. If 72 kg of rice is sufficient for 288 people, rice required for 450 people is
(a) 96 kg (b) 108 kg (c) 112.5 kg (d) 120 kg
4. A tanker supplies 2400 litres of water in 40 minutes. Time required to supply 5400 litres is
(a) 85 min (b) 90 min (c) 95 min (d) 100 min
5. If 16 geometry boxes cost ₹720, cost of 45 boxes is
(a) ₹1950 (b) ₹2025 (c) ₹2100 (d) ₹2250
6. Which pair of ratios is **NOT** proportional?
(a) 18:27 and 4:6 (b) 25:40 and 5:8 (c) 21:35 and 3:5 (d) 16:24 and 5:7
7. A mixture contains nickel and zinc in the ratio 7:3. If zinc is 18 kg, nickel is
(a) 36 kg (b) 40 kg (c) 42 kg (d) 48 kg
8. If 1 m³ of gravel weighs 1500 kg, weight of 0.48 m³ of gravel is
(a) 700 kg (b) 720 kg (c) 750 kg (d) 780 kg

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): If $a:b :: c:d$, then $c = (a \times d)/b$.

Reason (R): This relation follows from cross multiplication.

- 10. Assertion (A):** Ratios 126:189 and 2:3 are proportional.
Reason (R): Both ratios reduce to the same simplest form.

SECTION – B

Questions 11 to 14 carry 2 marks each.

- 11.** (a) Reduce 294 : 441 to simplest form.
(b) Check whether 14 : 21 is proportional to it.
- 12.** (a) If 25 kg wheat costs ₹875, find cost per kg.
(b) Find cost of 42 kg wheat.
- 13.** (a) Find total parts in the ratio 21 : 9.
(b) Divide ₹15000 in this ratio.
- 14.** (a) A truck travels 360 km in 6 hours. Find speed.
(b) Distance travelled in 11 hours.

SECTION – C

Questions 15 to 17 carry 3 marks each.

- 15.** (a) Simplify 156 : 234
(b) Simplify 20 : 30
(c) Check whether the two ratios are proportional
- 16.** (a) Total parts in the ratio 15:5
(b) Quantity of first part if total = 200 mL
(c) Quantity of second part
- 17.** (a) A machine produces 1680 units in 21 hours. Rate per hour
(b) Units produced in 10 hours
(c) Time required to produce 2400 units

SECTION – D

Questions 18 carry 5 marks each.

- 18.** A warehouse packs 2100 cartons in 30 hours.
(a) Cartons packed per hour
(b) Cartons packed in 6 hours
(c) Cartons packed in 45 hours
(d) Time required to pack 3150 cartons
(e) Method used

SECTION – E (Case Study Based Question)

Question 19 to 20 carry 4 mark

19. Case Study-1: Anganwadi Nutrition Supply

An Anganwadi centre prepares food daily. When 280 children are present, 42 kg of food grains are used. During a vaccination drive, the number of children increases to 360. To ensure every child receives the same quantity of food, the worker calculates the required food grains using proportional reasoning.



Answer the following Questions:

- (a) Food grains used per child
- (b) Write the proportion
- (c) Food grains required for 360 children
- (d) Extra food grains required

20. Case Study-2: Painting a School Building

A team of painters uses 18 litres of paint to paint 120 m^2 of wall area. For repainting a larger school building having 200 m^2 wall area with the same thickness of paint, the supervisor calculates the paint required using proportional reasoning to avoid wastage or shortage.



Answer the following Questions:

- (a) Paint used per m^2
- (b) Write the proportion
- (c) Paint required for 200 m^2
- (d) Extra paint required

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