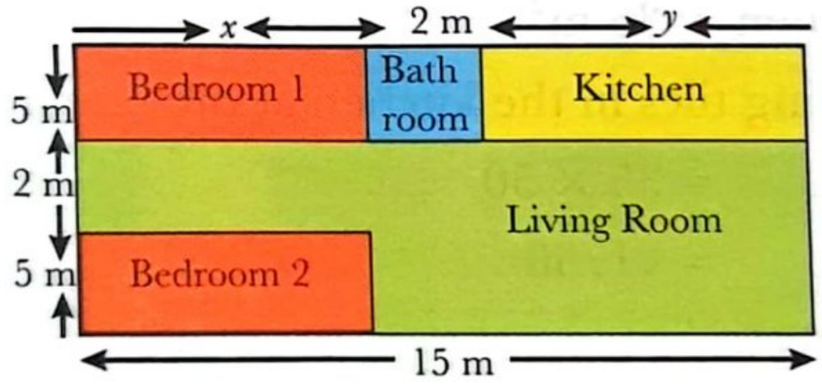
1. Read the following and answer any four questions from (*i*) to (*v*).

Amit is planning to buy a house and the layout is given below figure. The design and the measurement has been made such that areas of two bedrooms and kitchen together is 95 sq.m.

[*CBSE Question Bank*]



(*i*) The pair of linear equations in two variables from this situation are

(*a*) $x + y = 19$, $x + y = 13$ (*b*) $2x + y = 19$, $x + 2y = 13$ (*c*) $2x + y = 19$, $x + y = 13$ (*d*) none of these

(*ii*) The length of the outer boundary of the layout is

(*a*) 50 m (*b*) 52 m (*c*) 54 m (*d*) 56 m

(*iii*) The area of each bedroom and kitchen in the layout is

(*a*) 30 m^2, 40 m^2 (*b*) 30 m^2, 35 m^2 (*c*) 30 m^2, 45 m^2 (*d*) 35 m^2, 45 m^2

(*iv*) The area of living room in the layout is

(*a*) 60 m^2 (*b*) 75 m^2 (*c*) 80 m^2 (*d*) 100 m^2

(*v*) The cost of laying tiles in kitchen at the rate of ₹50 per sq.m is

(*a*) ₹1700 (*b*) ₹1800 (*c*) ₹1900 (*d*) ₹1750

3. A test consists of 'True' or 'False' questions. One mark is awarded for every correct answer while $\frac{1}{4}$ mark is deducted for every wrong answer. A student knew correct answers of some of the questions. Rest of the questions he attempted by guessing. He answered 120 questions and got 90 marks.

Type of Question	Marks given for correct answer	Marks deducted for wrong answer
True/False	1	0.25

Based on the above information answer the following questions.

(*i*) (*a*) How many number of questions did he guess?

(*b*) If answer to all questions he attempted by guessing were wrong and answered 80 correctly, then how many marks will get?

(*ii*) (*a*) If answer to all questions he attempted by guessing were wrong, then how many questions were answered correctly to score 95 marks?

(*b*) How many maximum marks that a student can score?

Mathematics teacher of a school took the standard 10 students to see the painting exhibition which was held at ART COLLEGE OF EDUCATION, Bangalore. It is the part of art integration of Mathematics. The teacher and students had interest in painting as well. Students were eager to see the above paintings. The teacher explained that the above paintings are based on concept of a pair of linear equations of two variables.

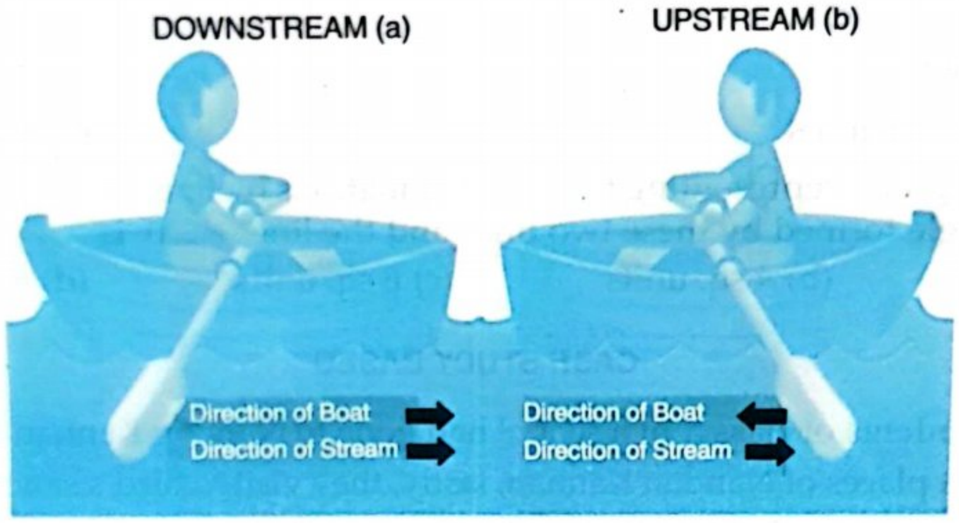


Fig. 3.8

(i) If the speed of boat is 5 km/hr and speed of stream is 2 km/hr. What is the speed of the boat in downstream?

(a) 5 km/hr (b) 2 km/hr (c) 7 km/hr (d) 3 km/hr

(ii) If the speed of boat is 5 km/hr and speed of stream is 2 km/hr. What is the speed of the boat in upstream?

(a) 5 km/hr (b) 2 km/hr (c) 7 km/hr (d) 3 km/hr

(iii) A boat goes 21 km downstream. What is the time required to cover it?

(a) 5 hr (b) 2 hr (c) 7 hr (d) 3 hr

(iv) A boat goes 12 km up stream. What is the time required to cover it?

(a) 4 hr (b) 2 hr (c) 6 hr (d) 3 hr

(v) If speed of boat and stream be x km/hr and y km/hr respectively. What is the distance covered by downstream boat in 't' hours?

(a) $t(x-y)$ km (b) $t(x+y)$ km (c) $2t(x-y)$ km (d) $2t(x+y)$ km

No.

Date

EPW-2

1) (i) $x + 2 + y = 15$

$x + y = 13 \rightarrow (1)$

$2x 5x + 5y = 95$

$2x + y = 19 \rightarrow (2)$ (c)

(ii) (1)-(2), $-x = -6$

$x = 6$

$y = 7$

length of outer boundary $= 2(l+b) = 2(15+12)$

$= 2 \times 27 = 54m$ (c)

(iii) area of each bedroom $= 5x = 5 \times 6 = 30 m^2$

area of kitchen $= 5y = 5 \times 7 = 35 m^2$ (b)

(iv) area of living room $= 15 \times 7 - 30 = 105 - 30$

$= 75 m^2$ (b)

(v) cost of laying tiles = area x rate

$= 35 \times 50 = ₹1750$ (d)

2) Let the no. of correct answers be x and no. of wrong answers be $120 - x$

$$1 \times x - \frac{1}{4}(120 - x) = 90$$

$4x - 120 + x = 360$

$5x = 360 + 120$

$5x = 480$

$x = 96$

no. of correct answers $= 96$

No. of wrong answers (guessed) $= 120 - 96 = 24$

(i) (a) 24

(b) $80 \times 1 - \frac{1}{4} \times (120 - 80) = 80 \times 1 - \frac{1}{\cancel{4}} \times \cancel{40}^{10} = \underline{70}$

(ii) (a) $x \times 1 - \frac{1}{4} \times (120 - x) = 95$

$4x - 120 + x = 95 \times 4$

$5x = 380 + 120$

$5x = 500 \Rightarrow x = \underline{100}$

(b) 120

No.

Date

(i)

8) $x = 5 \text{ km/hr}$

$y = 2 \text{ km/hr}$

$x + y = 7 \text{ km/hr}$ (c)

(ii) $x - y = 3 \text{ km/hr}$ (d)

(iii) $T = \frac{D}{S} = \frac{21}{7} = 3 \text{ hrs}$ (d)

(iv) $T = \frac{D}{S} = \frac{12}{3} = 4 \text{ hrs}$ (a)

(v) $D = S \times t$

$= (x + y)\, t \text{ km}$ (b)