

# Summative Assessment - I

Medium: ENGLISH

CLASS: VII

2016-17

SUBJECT: MATHEMATICS

## Principles of Valuation (Key)

### Section - I

1. The given integers are  $10, -6, 20, -84, -2$  }  
 Descending order :  $20, 10, -2, -6, -84$  } - 2 marks

2. 
$$\begin{aligned} -8 &= -15 + 7 \\ &= -16 + 8 \\ &= -17 + 9 \\ &= -18 + 10 \dots \text{etc} \end{aligned}$$
 }  $4 \times \frac{1}{2} = 2 \text{ marks}$

3. 
$$1234.56 = (1 \times 1000) + (2 \times 100) + (3 \times 10) + (4 \times 1)$$
  

$$+ (5 \times \frac{1}{10}) + (6 \times \frac{1}{100}) \quad - 1 \text{ mark}$$
  

$$= 1000 + 200 + 30 + 4 + \frac{5}{10} + \frac{6}{100} \quad - 1 \text{ mark}$$
  
2 marks

4. In a triangle, the angles are  $2x^\circ, x+30^\circ, x-10^\circ$

Sum of the angles in a triangle is  $180^\circ$   $\frac{1}{2}$

$$\begin{aligned} 2x^\circ + x + 30^\circ + x - 10^\circ &= 180^\circ \\ 4x + 20 &= 180^\circ \\ 4x &= 160^\circ \Rightarrow x = 40^\circ \end{aligned}$$
 } - 1 mark

the angles are 
$$\begin{aligned} 2x^\circ &= 2 \times 40 = 80^\circ \\ x + 30^\circ &= 40 + 30 = 70^\circ \\ x - 10^\circ &= 40 - 10 = 30^\circ \end{aligned}$$
 }  $\frac{1}{2} \text{ mark}$

2 marks

(contd...)

Section - II

5. Let the three consecutive integers be  $x, x+1, x+2$ . } 1-mark

Sum of the three consecutive integers  $x + x+1 + x+2 = 3x+3$ . } -1-mark

According to the data, sum of the three consecutive integers = 18

$3x+3 = 18$  } 1-mark

$3x = 18-3$

$3x = 15$

$x = 5$

∴ consecutive integers are  $x = 5$   
 $x+1 = 5+1 = 6$  } 1-mark  
 $x+2 = 5+2 = 7$

∴ 5, 6, 7 are consecutive integers. 4 marks

6. In an Isosceles triangle lengths of sides are 3.5 cm, 3.5 cm, 2.5 cm } 1-mark

Perimeter of a triangle = Sum of <sup>lengths of</sup> three sides } 1-mark

$= 3.5 + 3.5 + 2.5$  cm }  $1\frac{1}{2}$  mark

$= 9.5$  cm }  $\frac{1}{2}$  mark

∴ Perimeter of the triangle = 9.5 cm.

4 marks

7.

$$\text{LHS} = 20 \times [8 + (c-2)]$$

$$= 20 \times [8 - 2]$$

$$= 20 \times 6$$

$$= 120$$

} 1 1/2 marks

$$\text{RHS} = [20 \times 8] + [20 \times (c-2)]$$

$$= 160 + (c-40)$$

$$= 160 - 40$$

$$= 120$$

} 1 1/2 marks

$$\therefore \text{LHS} = \text{RHS}$$

$$\therefore 20 \times [8 + (c-2)] = [20 \times 8] + [20 \times (c-2)] \text{ is true. } \left. \begin{array}{l} \text{is} \\ \text{true.} \end{array} \right\} 1 \text{ m}$$

4 marks

8.

In the given figure, angles are } 2 marks  
LBoc, LBOD, LBoE, LBoA, LCoD, LCoE,  
LCoA, LDOE, LDOA, LEOA.

By the above angles

Acute angles are: LBoc, LCoD, LAoE, LEOA

Obtuse angles are: LBoE, LAoC

Right angles are: LBOD, LAOD

Straight angle : LAoB

} 4 x 1/2 = 2 marks

4 marks

9.

According to the data,

Let the number be =  $x$  say  $-\frac{1}{2} m$

two times of the number =  $2x$   $-\frac{1}{2} m$

Add 36 to  $2x = 2x + 36$   $-\frac{1}{2} m$

this is to reach 100, need four

$\therefore 2x + 36 + 4 = 100$   $-\frac{1}{2} m$

$2x + 40 = 100$   $-\frac{1}{2} m$

$2x = 100 - 40$   $-\frac{1}{2} m$

$2x = 60$   $-\frac{1}{2} m$

$x = 30$   $-\frac{1}{2} m$

$\therefore$  Required Number = 30

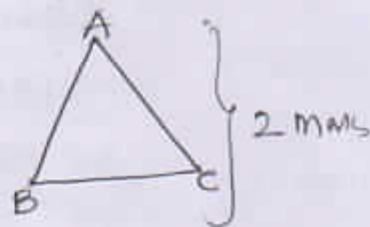
4 marks

Section - III

10.

(a) According to the data in  $\Delta ABC$ .

$LA = 3LB$  ;  $LC = 2LB$



Sum of the angles in  $\Delta ABC = 180^\circ$

$LA + LB + LC = 180^\circ$

$\Rightarrow 3LB + LB + 2LB = 180^\circ$  (  $\because LA = 3LB$  ;  $LC = 2LB$  )  $4$  marks

$\Rightarrow 6LB = 180^\circ$

$\Rightarrow LB = \frac{180^\circ}{6} = 30^\circ$

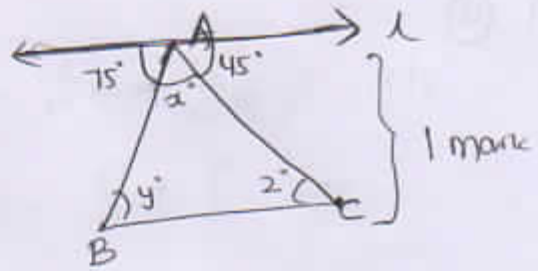
Remaining angles are  $LA = 3LB = 3 \times 30^\circ = 90^\circ$  }  $2$  marks

$LC = 2LB = 2 \times 30^\circ = 60^\circ$

$\therefore$  Angles in triangle are  $90^\circ, 30^\circ, 60^\circ$

8 marks

10) (b) From the figure  
 $l \parallel BC$ ,



AB is transversal line

$75^\circ, y^\circ$  are Alternative interior angles  
 Since, Alternative angles are equal when  $l \parallel BC$  } 2 marks

$$\therefore y = 75^\circ$$

Since,  $l \parallel BC$ , AC is transversal  $z, 45^\circ$  are  
 Alternative angles, they are also equal } 2 marks

$$\therefore z = 45^\circ$$

$\therefore$  Sum of interior angles in  $\triangle ABC = 180^\circ$   
 $\angle x + \angle y + \angle z = 180^\circ$   
 $\angle x + 75^\circ + 45^\circ = 180^\circ$   
 $\angle x + 120^\circ = 180^\circ$   
 $\angle x = 180^\circ - 120^\circ = 60^\circ$   
 $\therefore$  Values of  $x, y, z$  are  $60^\circ, 75^\circ, 45^\circ$  } 3 marks

Alt:

On a line  $l$ , at point A, three angles  
 that  $75^\circ, x^\circ, 45^\circ$  formed straight angle is  $180^\circ$  } 3 marks

$$\therefore 75^\circ + x + 45^\circ = 180^\circ$$

$$x + 120^\circ = 180^\circ$$

$$x = 180^\circ - 120^\circ$$

$$x = 60^\circ$$

$\therefore$  The values of  $x, y, z$  are  $60^\circ, 75^\circ, 45^\circ$



11. (a)

(i)  $2\frac{2}{3} + 3\frac{1}{4}$   
 $= \frac{7}{3} + \frac{13}{4}$  LCM of 3, 4 = 12  
 $= \frac{28+39}{12}$   
 $= \frac{67}{12} = 5\frac{7}{12}$  } 2 marks

(ii)  $1\frac{4}{9} + \frac{3}{7}$   
 $= \frac{13}{9} + \frac{3}{7}$  LCM of 9, 7 = 63  
 $= \frac{91+27}{63}$   
 $= \frac{118}{63} = 1\frac{55}{63}$  } 2 marks

(iii)  $\frac{5}{6} \times 4\frac{2}{7}$   
 $= \frac{5}{6} \times \frac{30}{7}$   
 $= \frac{25}{7}$   
 $= 3\frac{4}{7}$  } 2 marks

(iv)  $3\frac{2}{5} \div \frac{5}{9}$   
 $= \frac{17}{5} \div \frac{5}{9}$  (reciprocal of  $\frac{5}{9}$  is  $\frac{9}{5}$ ) } 2 marks  
 $= \frac{17}{5} \times \frac{9}{5}$   
 $= \frac{153}{25} = 6\frac{3}{25}$  } 8 marks

11) (b)

Let the No. of Boys be :  $x$  say. }  
 No. of girls is 10 more than boys. } 2 marks  
 ie girls =  $x + 10$ .

Total No. of boys and girls are }  
 $x + x + 10 = 2x + 10$  } 2 marks

According to the data, No. of boys and girls are 52

$$\begin{aligned} \therefore 2x + 10 &= 52 \\ 2x &= 52 - 10 \\ 2x &= 42 \\ x &= \frac{42}{2} = 21 \\ \therefore x &= 21 \end{aligned}$$

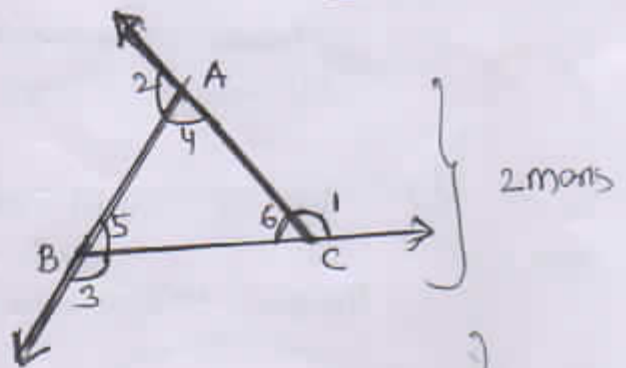
} 3 marks

$\therefore$  No. of boys ( $x$ ) = 21 }  
 No. of girls ( $x + 10$ ) =  $21 + 10 = 31$  } 1 mark

8 marks

12) (a) From the figure

In  $\Delta ABC$ ,  
 $L_1, L_2, L_3$  are Exterior angles  
 $L_4, L_5, L_6$  are interior angles



$$\begin{aligned} L_2 + L_4 &= 180^\circ \text{ --- (i) } (\because \text{linear pair of angles}) \\ L_3 + L_5 &= 180^\circ \text{ --- (ii) } ( \quad \quad \quad ) \\ L_1 + L_6 &= 180^\circ \text{ --- (iii) } ( \quad \quad \quad ) \end{aligned}$$

} 2 marks

Adding the equations (i), (ii) and (iii) on both sides,  
we get,

$$L_2 + L_4 + L_3 + L_5 + L_1 + L_6 = 180^\circ + 180^\circ + 180^\circ$$

$$(L_1 + L_2 + L_3) + (L_4 + L_5 + L_6) = 540^\circ$$

$$L_1 + L_2 + L_3 + 180^\circ = 540^\circ$$

$$\therefore L_1 + L_2 + L_3 = 540^\circ - 180^\circ$$

$$\therefore L_1 + L_2 + L_3 = 360^\circ$$

Hence the sum of exterior angles of  $\triangle ABC = 360^\circ$  } 1 m

Hence Proved

8 marks

12) (b)

Total No. of Questions given in an Exam = 10 Questions

Marks awarded for correct answer = 3

Marks awarded for wrong answer = -1

Marks awarded for not attempting the question } = 0

1 mark

(i) No. of correct answers attempted by Kiran = 5

Marks awarded for 5 correct answers =  $5 \times 3 = 15$

1 m

No. of incorrect answers attempted by Kiran = 5

Marks awarded for 5 incorrect answers =  $5 \times (-1) = -5$

1 m



$$\begin{aligned}
 \therefore \text{No. of marks scored by Kiran} & \left. \begin{aligned} &= 15 + (-5) \\ &= 15 - 5 \\ &= 10 \text{ marks} \end{aligned} \right\} 1\frac{1}{2} \text{ m}
 \end{aligned}$$

(ii)  $\left. \begin{aligned} \text{No. of correct answers attempted by Ramya} &= 7 \\ \text{marks awarded for 7 correct answers} &= 7 \times 3 \\ &= 21 \end{aligned} \right\} 1 \text{ m}$

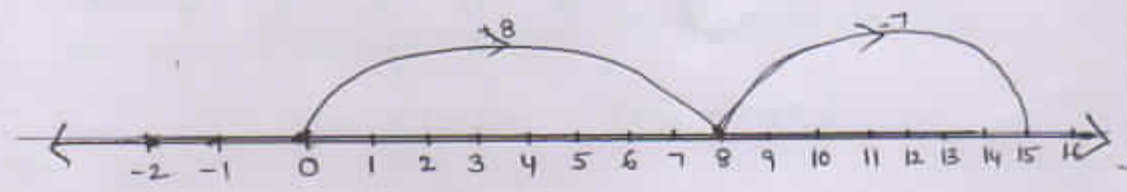
$\left. \begin{aligned} \text{No. of incorrect answers attempted by Ramya} &= 3 \\ \text{marks awarded for 3 incorrect answers} &= 3 \times (-1) \\ &= -3 \end{aligned} \right\} 1 \text{ m}$

Hence, Ramya score is  $\left. \begin{aligned} &21 + (-3) \\ &= 21 - 3 \\ &= 18 \end{aligned} \right\} 1\frac{1}{2} \text{ m}$

8 marks

(13) (a) i, Representing  $8 - (-7)$  on a Number line

Negative number subtracting from a number, means Positive number is added that number } 2 marks

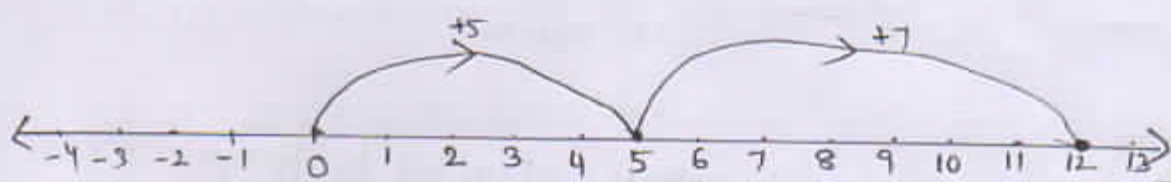


$$8 - (-7) = 8 + 7 = 15$$

(ii) Represent  $5+7$  on a number line

Starting from '0' moves 5 and 7 steps like  
 $5+7=12$

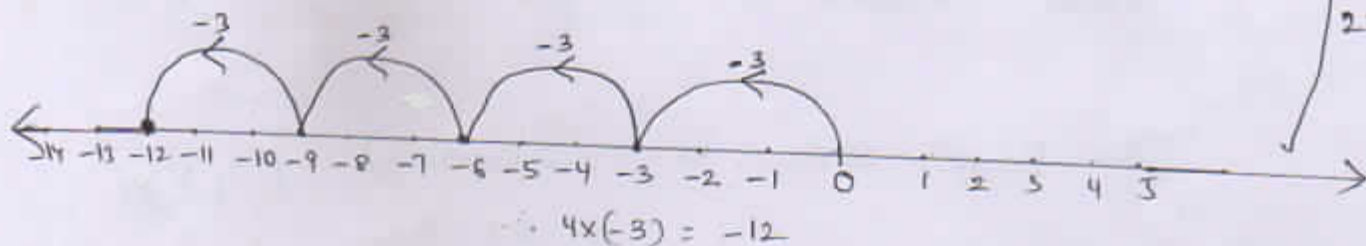
2 marks



(iii) Represent  $4 \times (-3)$  on a number line

Starting from '0' and make 4 jumps on 3 attempts moving left side on a number line

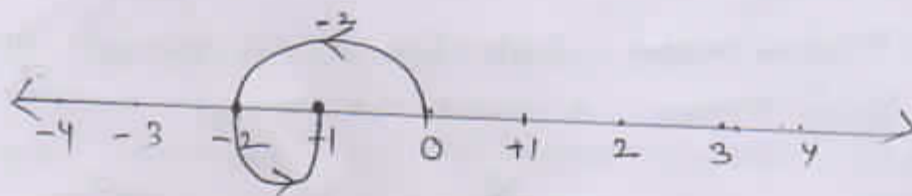
2 marks



(iv) Represent  $(-2) - (-1)$  on a number line

Negative number is subtracting from a number. means positive number adds to that number and moves right side on a number line

2 marks



$$(-2) - (-1) = -2 + 1 = -1$$

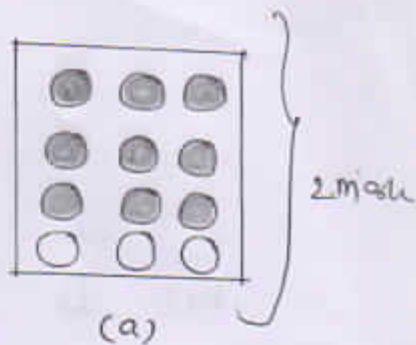
8 marks

(13) (b) i, In figure (a)

No. of circles = 12

$$\frac{3}{4} \text{ of the circle} = \frac{3}{4} \times 12 = 9$$

$\therefore$  No. of circles needed for shading = 9

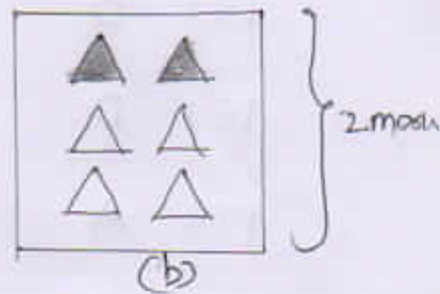


ii In figure (b)

No. of Triangles = 6

$$\frac{1}{3} \text{ of triangles} = \frac{1}{3} \times 6 = 2$$

No. of triangles for shading = 2

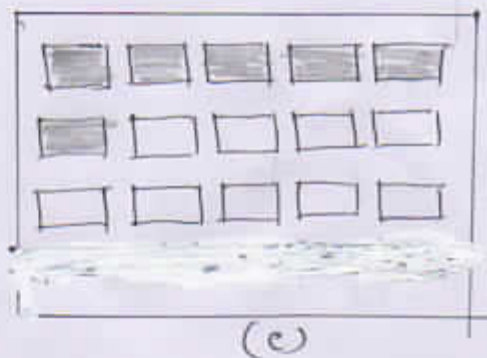


(iii) In figure (c)

No. of rectangles = 15

$$\frac{2}{5} \text{th part of 15 rectangles} = \frac{2}{5} \times 15 = 6$$

$\therefore$  No. of rectangles needed for shading = 6

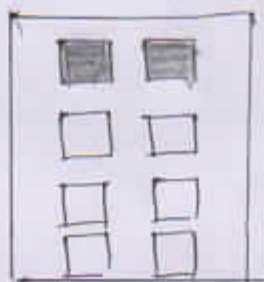


(iv) In figure (d)

No. of Squares = 8

$$\frac{1}{4} \text{th part of 8 squares} = \frac{1}{4} \times 8 = 2$$

$\therefore$  No. of squares needed for shading = 2



Key

Part - B

$20 \times \frac{1}{2} = 10 \text{ marks}$

14) B

24) C

15) D

25) D

16) D

26) D

17) A

27) C

18) A

28) D

19) D

29) B

20) B

30) C

21) B

31) D

22) A

32) B

23) A

33) A