

Chapter number 10 The Signal 1 (7th Eng lit)

Comprehension exercise A - Tick the correct options

Ex A- 1) d 2)d 3)d 4)c

Ex- B read the sentences and answer the questions

Ans1) Semyon said these words.

Ans2) These words convey that Semyon also had problems in the past and experienced sorrow sometime or the other.

Ans c) Semyon was referring to the days when he was a soldier.

Q2 Ans a) Arina was Semyon's wife

b) The neighbour was vasily.

C) Semyon felt this way because whenever he tried to talk to his neighbour he became angry and rude

Q3 Ans a) Semyon said these words .Them is the chief and the traffic inspector.

b) These words were spoken when chief and inspector went towards Vasily's hut .

C) The speaker thought like that because vasily and traffic inspector had old grudge against each other and both had done complaint to the chief who came for inspection.

Exercise-C

Ans 1) Semyon Ivanov was an ex soldier who served as an assistant to an army officer .Once he was travelling in a train ,when he met the station master who was his officer in regiment offered him a job of track walker.

Ans 2) The track Walker had to go over the track twice a day ,examine and tighten up the nuts ,look at water pipes etc.There was only one drawback of this job that always he had to get inspectors permission for the least thing which he wanted to do.

Ans3) Vasily was angry because he thought he was underpaid and fined for growing cabbages without taking permission from inspector.

Ans4) The sleepers were carefully examined ,spikes driven in nuts tightened posts painted and yellow sand sprinkled at the level crossing.

Ans5) When the chiefs trolley approached Semyon's hut, he ran out and reported in soldierly fashion.

Ex-D Ans a) Yes, Vasily's was hot tempered. I can say it because whenever semyon tried to talk to him he just walked off .he had also an old grudge with the inspector.

Q2). Ans.Yes , we know that the chief was an important person from the way he arrived.He was carried on a six wheel trolley whose handles were worked by four men.

Q3) Ans. Yes, Semyon was different from Vasily's. he was more patient, satisfied tolerant person.

Ch-11 The Signal 2

Ex-A. 1)b,c 2)a , c 3)a

Ex-B Ans 1) he had a stick in his hand and a small bundle on his shoulder.

2) complaint about the chief to the head office.

3) he heard the hooter of the factory.

4) he realised that he could not go to his Hut and return in time.

5) the deep cut on his arm was bleeding continuously and he could not see the train or hear the noise .

6)Vaisely held the blood stained scarf high in the air.

Q/Ans Ex(c)

Ans1) When Semyon meet Vasily during his round,Vasily was very pale and his eyes had a wild look . When the chief had gone to Vasily's hut for the inspection they had argued and the chief had slapped Vasily.

Ans2) Semyon collected sticks from a big marsh in the forest at the end of his section. he made flutes out of them.

Ans3) He was squatting on the line to loosen the rail his plan was that the rail would move to other side when the 6 o'clock train passed by it which cause a fatal accident to occur.

Ans 4) Semyon started running towards his hut to fetch his tool in order to repair the rail.

Ans5)Train no.7 was due to two minutes past six o'clock it was a passenger train.

Ex- D Think and Answer

Ans1) Both Vasily and Semyon saved the lives of the passengers. Since Vasily was responsible for the loosening the rail track to cause an accident but afterwards he helped Semyon to avoid the accident. Semyon soaked the scarf in his blood to make it red but he was injured badly and not able to hold it then Vasily came and hold the flag and the train stopped.

Q2 Ans a) Vasily helped Semyon as he realized his mistake.

Novel- ch-4 The Rescue Plan

Ans1) In chapter 1,2,3 I came to know that passpartout was a coward character who was afraid of doing any daring act. but when he rescued Aouda

bravely and wisely my opinion has changed.

Ans2) Wishing to our elders is an important custom in our country it is important to show expression of love and respect towards them.

Ans3)In the novel fog is my favourite hero .He is very courageous, adventurous and daring person who faces difficult situations wisely.

Ch -5 The Trial

Ans1) I think Aouda felt it was her fault that fog and Passpartout were in prison because they rescued Aouda from being burnt with the dead body of her husband .It was a custom prevailed at that time and they protested against it.

Ans2) I think it was not right that fog was arrested too because it was not his fault that passpartout went inside the temple with shoes

and broke the law.

Ans3)I think when someone has done something wrong I will try to make him realise his mistake and tell him to improve it.

Ch- The rescue plan

Comprehension- a-2 ,b-5, c-3,d-4,e-1

The Trial

Comprehension

- 1) When.....young Indian guide
- 2) Aouda.....Hongkong
- 3) A policeman.....police station
- 4) In the..., second priest
- 5) The judge.....month

Ch-10 word study The signal 1

Ex 2. Broad shouldered

3. Sure footed

4. Cold blooded

5. Six-sided

F- Matching

1-e,2-c,3-d,4-a,5-b

G) 1) so far 2)far cry 3) as far as one can see 4) will go far 5) from far and wide

Ex- A 1d,2-d,3-d 4-c

Ch -11 The Signal 2

Word study-

E)1-tough, 3-still, 6-cheerful, 7-agile,8-different, 2-obstinate, 4-straight, 5-quick

F)1-cheerful, 2-quick, 3-different, 4-obstinate, 5-straight

G) matching

1-e,2-d,3-a,4-b,5-c

H)1)almanac 2)atlas 3) thesaurus 4) encyclopaedia 5) directory

Grammar study –

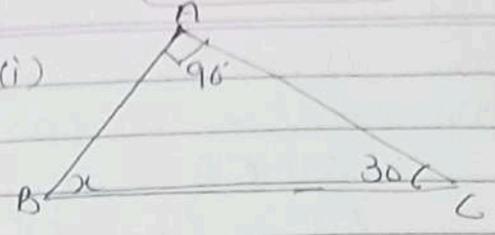
E) 1) loud mouthed,2) broad shouldered 3) sure footed 4) cold blooded 5) six-sided

F) 1 e, 2c, 3d,4a,5b

EX - 14.1

1 Q (i) $20^\circ, 70^\circ, 90^\circ$
 $20^\circ + 70^\circ + 90^\circ = 180^\circ$ yes
 it is a Δ

50 (i)



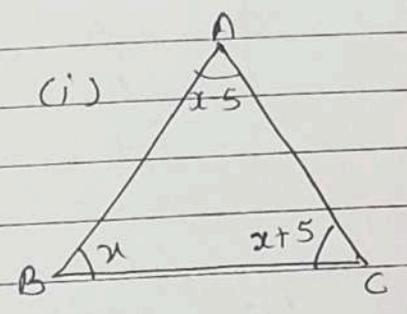
2 Q let each angle = x
 sum of 3 angles of $\Delta = 180^\circ$
 $x + x + x = 180$
 $3x = 180$
 $x = \frac{180}{3} = 60$

In ΔABC
 $\angle A + \angle B + \angle C = 180^\circ$
 $90^\circ + x + 30^\circ = 180$
 $x = 180^\circ - 120^\circ$
 $x = 60$

(ii) to (iv) H.W

3 Q so each angle = 60°
 $\angle A = 45^\circ, \angle B = 70^\circ, \angle C = ?$

60 (i)



By angle sum property
 $\angle A + \angle B + \angle C = 180^\circ$
 $45^\circ + 70^\circ + \angle C = 180^\circ$
 $\angle C = 180^\circ - 115^\circ$
 $\angle C = 65^\circ$

4 Q Given $\angle A = 2\angle B$
 $\angle C = 3\angle B$

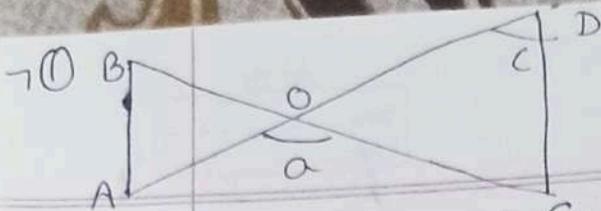
In ΔABC
 $x-5 + x + x+5 = 180$
 $3x = 180$
 $x = \frac{180}{3}$
 $x = 60^\circ$

sum of 3 angle of Δ
 $\angle A + \angle B + \angle C = 180^\circ$
 $2\angle A + \angle B + 3\angle B = 180$
 $6\angle B = 180^\circ$
 $\angle B = \frac{180}{6} = 30^\circ$

$\angle A = x-5$
 $60-5 = 55^\circ$
 $\angle B = x = 60^\circ$
 $\angle C = x+5$
 $60+5 = 65^\circ$

$\angle A = 2\angle B$
 $= 2 \times 30^\circ = 60^\circ$
 $\angle B = 30^\circ$
 $\angle C = 3\angle B$
 $3 \times 30^\circ = 90^\circ$

(ii) to (iv) H.W



70) Show that $\angle a = \angle b + \angle c$

In $\triangle ABC = \triangle DCB$ (alternate angle)

$$\angle DCB = b$$

$$\angle a = \angle b + \angle c$$

ext angle = sum of interior opp angle

(i) If $\angle b = 60^\circ$, $\angle c = 50^\circ$, $\angle a = ?$

$$\angle a = \angle b + \angle c$$

$$= 60 + 50$$

$$\angle a = 110$$

(ii) $\angle a = 130^\circ$, $\angle b = 55^\circ$, $\angle c = ?$

$$\angle a = \angle b + \angle c$$

$$130 = 55 + \angle c$$

$$\angle c = 130 - 55$$

$$\angle c = 75$$

(iii) $\angle a = 108^\circ$, $\angle c = 60^\circ$, $\angle b = ?$

$$\angle a = \angle b + \angle c$$

$$108 = \angle b + 60$$

$$108 - 60 = \angle b$$

$$\angle b = 48$$

80) Let 1st angle = $4x$

2nd " = $5x$

3rd " = $6x$

$$4x + 5x + 6x = 180$$

$$15x = 180$$

$$x = \frac{180}{15}$$

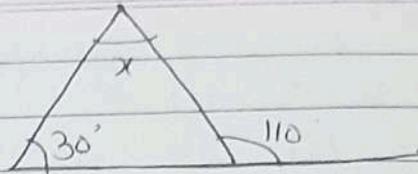
$$x = 12$$

$$\begin{aligned} \text{1st angle} &= 4x \\ &= 4 \times 12 \\ &= 48 \end{aligned}$$

$$\begin{aligned} \text{2nd angle} &= 5x \\ &= 5 \times 12 \\ &= 60 \end{aligned}$$

$$\begin{aligned} \text{3rd angle} &= 6x \\ &= 6 \times 12 \\ &= 72 \end{aligned}$$

09 One angle of $\Delta = 60^\circ$
 2nd angle " " = $6x$
 3rd " " " = $4x$



In a Δ
 $60 + 6x + 4x = 180$

$$60 + 10x = 180$$

$$10x = 180 - 60$$

$$x = \frac{120}{10}$$

$$x = 12$$

So 2nd angle = $6x$
 $= 6 \times 12 = 72$

3rd angle = $4x$
 $= 4 \times 12 = 48$

Ext angle = sum of int
 opp angles

$$110 = x + 30$$

$$x = 110 - 30$$

$$x = 80$$

(ii) do (iv) H.W

10 One angle of $\Delta = 61^\circ$
 Given ratio = $1\frac{1}{2} : 1\frac{1}{3}$

$$= \frac{3}{2} : \frac{4}{3}$$

LCM of 2 and 3 = 6

$$\frac{3}{2} \times 6 : \frac{4}{3} \times 6$$

$$9 : 8$$

So 2nd angle = $9x$

3rd angle = $8x$

In a Δ

$$9x + 8x + 61 = 180$$

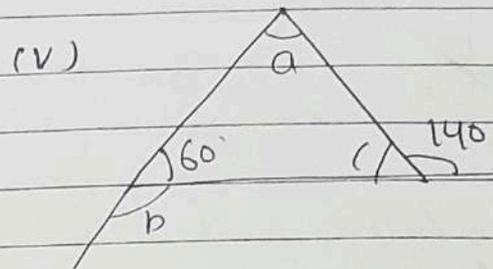
$$17x = 180 - 61$$

$$17x = 119$$

$$x = \frac{119}{17} = 7$$

So 2nd angle = $9x = 9 \times 7 = 63$

3rd angle = $8x = 8 \times 7 = 56$



$$\angle b + 60 = 180 \text{ (st. line)}$$

$$\angle b = 180 - 60$$

$$\angle b = 120$$

$$\angle c + 140 = 180 \text{ (st. line)}$$

$$\angle c = 180 - 140$$

$$= 40$$

$$\angle a + \angle c + 60 = 180$$

(sum of 3 \angle s of Δ)

$$\angle a + 40 + 60 = 180$$

$$\angle a = 180 - 100$$

$$\angle a = 80$$

$$(vii) 2x + 16 + x + 8 = 111$$

ext \angle = sum of int opp angles

$$3x + 24 = 111$$

$$3x = 111 - 24$$

$$3x = 87$$

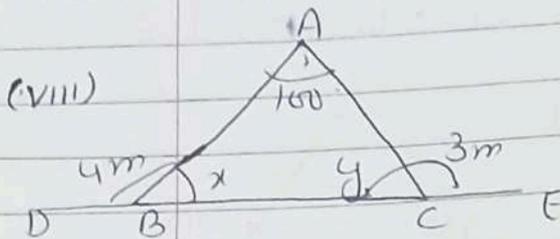
$$2x + 16 = 2 \times 29 + 16$$

$$= 58 + 16$$

$$= 74$$

$$x + 8 = 29 + 8$$

$$= 37$$



Let $\angle ABC = x$

$\angle ACB = y$

$x + 4m = 180^\circ$ (st line L)

$x = 180 - 4m$

$y + 3m = 180^\circ$ (st line L)

$y = 180 - 3m$

In Δ

$\angle A + \angle B + \angle C = 180^\circ$

$100 + x + y = 180$

$x + y = 180 - 100$

$x + y = 80^\circ$

$180 - 4m + 180 - 3m = 80$

$-7m + 360 = 80$

$-7m = 80 - 360$

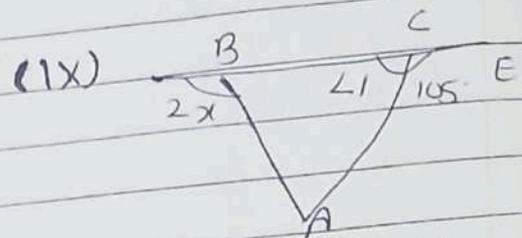
$+7m = +280$

$m = \underline{280}$

$m = 40$

So, $\angle ABD = 4m$
 $= 4 \times 40 = 160^\circ$

$\angle ACE = 3m$
 $3 \times 40 = 120$



Let $\angle ACB = \angle 1$

$\angle 1 + 105^\circ = 180^\circ$

(st line L)

$\angle 1 = 180 - 105^\circ$

$\angle 1 = 75^\circ$

In ΔABC

$2x = x + \angle 1$

ext \angle = sum of int opp angles

$2x = x + 75^\circ$

$2x - x = 75^\circ$

$x = 75^\circ$

$\angle ABD = 2x$

$= 2 \times 75^\circ$

$= 150^\circ$

Ex-14.2

- 1 Q (i) One
(iv) hypotenuse
(vii) sum of

- (iii) $180^\circ, 2$
(v) $45^\circ, 45^\circ, 90^\circ$
(viii) equal

- (iii) 2
(vi) 60°

2 Q (i) $x + y + 80^\circ = 180^\circ$
(sum of three angle of $\Delta = 180^\circ$)

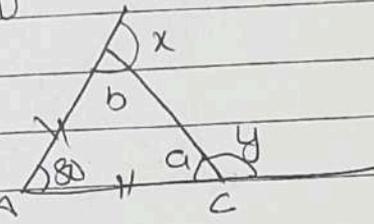
$x + \angle b = 180^\circ$
 $x + 50^\circ = 180^\circ$
 $x = 180^\circ - 50^\circ$
 $= 130^\circ$

(In isosceles Δ base angles equal)

$x + x + 80^\circ = 180^\circ$
 $2x = 180^\circ - 80^\circ$
 $2x = 100$
 $x = \frac{100}{2} = 50$

$y + \angle a = 180^\circ$
 $y + 50^\circ = 180^\circ$
 $y = 180^\circ - 50^\circ$
 $= 130^\circ$

(ii) H.W



Let $\angle ACB = \angle l$
 $\angle B = \angle l$

$\angle a + \angle b + 80^\circ = 180^\circ$
(sum of 3 angles of $\Delta = 180^\circ$)
 $\angle a = \angle b$

$\angle BAC + \angle a + \angle l = 180^\circ$
(isosceles Δ base angles are equal)
 $\angle BAC + 86^\circ = 180^\circ$

$\angle a + \angle a + 80^\circ = 180^\circ$
 $2\angle a = 180^\circ - 80^\circ$
 $2\angle a = 100$
 $\angle a = \frac{100}{2}$

(sum of 3 \angle s of $\Delta = 180^\circ$)
 $\angle BAC = 180^\circ - 86^\circ$
 $= 94^\circ$

$\angle a = 50^\circ$
 $\angle a = \angle b = 50^\circ$

$\angle BAC + \angle a + \angle l = 180^\circ$
 $94 + \angle a + \angle a = 180^\circ$
 $2\angle a = 180^\circ - 94$
 $2\angle a = 86^\circ$
 $\angle a = \frac{86}{2}$

$\angle a = 43^\circ$

$$\angle 1 + P = 180$$

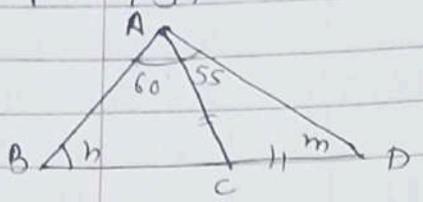
(Int \angle + ext $\angle = 180$)

$$43 + P = 180$$

$$P = 180 - 43$$

$$P = 137$$

(v)



In ΔACD

$$\angle m = 35$$

(Isosceles Δ base angles are equal)

$$\angle CAD + \angle ACD + \angle CDA = 180$$

Sum of 3 \angle s of $\Delta = 180$

$$35 + \angle ACD + m = 180$$

$$35 + \angle ACD + 35 = 180$$

$$\begin{aligned} \angle ACD &= 180 - 70 \\ &= 110 \end{aligned}$$

In ΔACB

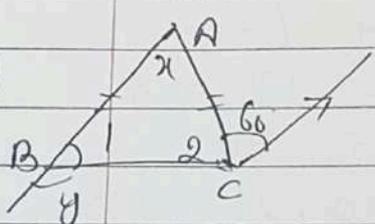
$$110 = 60 + n$$

(ext $\angle =$ sum of two int opp \angle)

$$n = 110 - 60$$

$$n = 50$$

(vi)



In ΔABC

$$\angle 1 = \angle 2$$

(Isosceles Δ base angles are equal)

$$\angle x = 60$$

(Alt int \angle)

$$x + \angle 1 + \angle 2 = 180$$

(sum of 3 \angle s of $\Delta = 180$)

$$x + \angle 1 + \angle 2 = 180$$

$$60 + 2\angle 1 = 180$$

$$2\angle 1 = 180 - 60$$

$$\angle 1 = \frac{120}{2}$$

$$\angle 1 = 60$$

$$\angle 1 = \angle 2 = 60$$

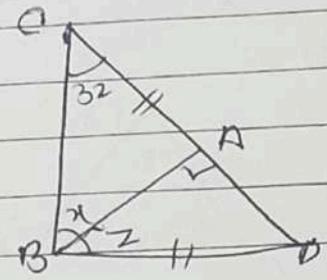
$$2y + \angle 1 = 180$$

(ext \angle + int $\angle = 180$)

$$2y + 60 = 180$$

$$\begin{aligned} 2y &= 180 - 60 \\ &= 120 \end{aligned}$$

(vii)



In ΔABC

$$\angle x = 32$$

(Isosceles Δ base \angle s are equal)

In ΔABD

$$\angle BAD = \angle BDA$$

$$\angle BDA = y$$

In ΔABC

$$x + 32 + \angle BAC = 180$$

$$32 + 32 + \angle BAC = 180$$

$$\begin{aligned} \angle BAC &= 180 - 64 \\ &= 116 \end{aligned}$$

$$\angle BAC + \angle BAD = 180$$

(ext \angle + int $\angle = 180$)

$$116 + \angle BAD = 180$$

$$\angle BAD = 180 - 116$$

$$= 64$$

$$\angle BAD = \angle BDA$$

$$y = \angle BDA = 64$$

In $\triangle ABD$

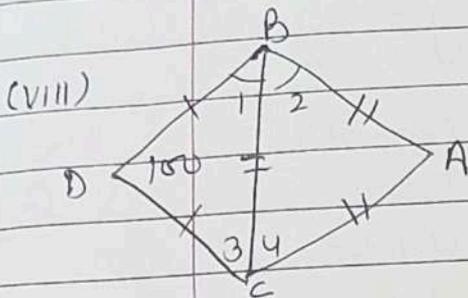
$$\angle BAD + \angle BDA + \angle ABD = 180$$

$$y + y + \angle Z = 180$$

$$64 + 64 + \angle Z = 180$$

$$\angle Z = 180 - 128$$

$$\angle Z = 52$$



In $\triangle ABC$

$$\angle A = \angle B = \angle C$$

$$\angle BAC = \angle ABC = \angle ACB = p$$

$$p + p + p = 180$$

$$3p = 180$$

$$\angle p = 60$$

All 3 sides are equal
so other angles are equal
so $\angle 2 = \angle 4 = 60$

In $\triangle BDC$

$$\angle 1 = \angle 3$$

(Isosceles \triangle base \angle s are equal)

$$100 + \angle 1 + \angle 3 = 180$$

Sum of 3 \angle s of $\triangle = 180$

$$100 + \angle 1 + \angle 1 = 180$$

$$2\angle 1 = 180 - 100$$

$$2\angle 1 = 80$$

$$\angle 1 = \frac{80}{2}$$

$$\angle 1 = 40$$

$$\text{So, } \angle 1 = \angle 3 = 40$$

now, $\angle x = \angle 1 + \angle 2$

$$= 40 + 60$$

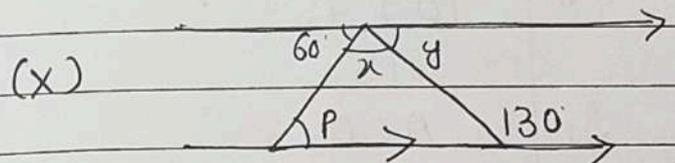
$$= 100$$

$$2y = \angle 3 + \angle 4$$

$$= 40 + 60$$

$$= 100$$

(IX) H.W



$$y + 130 = 180$$

ext \angle + int $\angle = 180$

$$\angle y = 180 - 130$$

$$= 50$$

$$\angle x + \angle y + 60 = 180$$

$$\angle x + 50 + 60 = 180$$

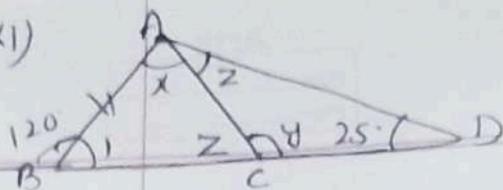
$$\angle x = 180 - 110$$

$$= 70 \text{ ans}$$

$$\angle p = 60 \text{ ans}$$

(alt int \angle)

(X1)



$$40 + \angle 1 + \angle 2 = 180$$

$$2\angle 1 = 180 - 40$$

$$\angle 1 = \frac{140}{2}$$

$$\angle 1 = 70$$

$$\angle 1 = \angle 2 = 70$$

In ΔABC

$$\angle 1 = \angle 2$$

$$\angle 1 + 120 = 180, \angle 1 = 60 = \angle 2$$

$$\angle x + \angle 1 + \angle 2 = 180$$

Sum of 3 \angle s of $\Delta = 180$

$$x + \angle 1 + \angle 1 = 180$$

$$x + 2\angle 1 = 180$$

$$\angle x + 2 \times 60 = 180$$

$$\angle x = 180 - 120$$

$$= 60$$

$$\angle 2 + y = 180$$

$$60 + \angle y = 180$$

$$y = \angle 3 = 45$$

In ΔACD

$$\angle y + \angle 3 + 90 = 180$$

$$\angle y + \angle y + 90 = 180$$

because $\angle y = \angle 3$

$$2y = 90$$

$$\angle y = \frac{90}{2} = 45$$

$$y + \angle 3 = 45$$

$$\angle y = \angle 1 + \angle 3$$

$$= 70 + 45$$

$$= 115$$

$$\angle x = \angle 1 + \angle 3$$

$$= 70 + 45$$

$$= 115$$

In ΔACD

$$\angle y + \angle z + 25 = 180$$

$$120 + \angle z + 25 = 180$$

$$\angle z = 180 - 145$$

$$= 35$$

300 Vertex angle of iso $\Delta = 100$

$$x + x + 100 = 180$$

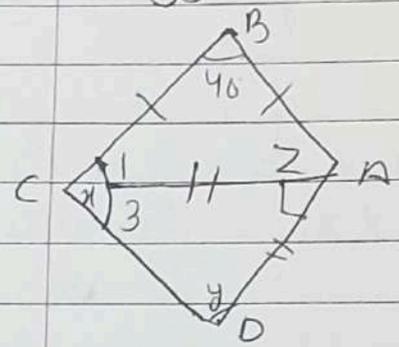
$$2x = 180 - 100$$

$$x = \frac{80}{2}$$

$$x = 40$$

So base angle = 40, 40

(XII)



In ΔABC

$$\angle 1 = \angle 2$$

(iso Δ base \angle equal)

4Q base angle of $\Delta = 52^\circ, 52^\circ$

Let vertex angle = x

$$x + 52 + 52 = 180$$

$$x = 180 - 104$$

$$= 76$$

So Vertex $\angle = 76^\circ$

base angles = $4x, 4x$

$$4 \times 20, 4 \times 20$$

$$80, 80$$

5Q Let vertex \angle of iso $\Delta = x$
base angles = $4x, 4x$

$$x + 4x + 4x = 180$$

$$9x = 180$$

$$x = 20$$

Vertex $\angle = x = 20$

base $\angle = 4x = 4 \times 20$
 $= 80, 80$

8Q Let first $\angle = 2x$

second $\angle = 3x$

3rd $\angle = 90$

$$2x + 3x + 90 = 180$$

$$5x = 180 - 90$$

$$5x = 90$$

$$x = \frac{90}{5} = 18$$

So, 1st $\angle = 2x$

$$= 2 \times 18 = 36$$

2nd $\angle = 3x$

$$3 \times 18 = 54$$

3rd $\angle = 90$

6Q Let base angles = x
Vertex angle = $x + 15$

$$x + 15 + x + x = 180$$

$$3x = 180 - 15$$

$$x = \frac{165}{3} = 55$$

So, base angles = $55, 55$

Vertex angle = $x + 15$
 $= 55 + 15$
 $= 70$

9Q Let base angles = x, x

Vertex angle =

$$3x(x+x)$$

$$3x(2x) = 6x$$

$$x + x + 6x = 180$$

$$8x = 180$$

$$x = \frac{180}{8} = 22.5$$

So, base angles = $22.5, 22.5$

Vertex $\angle = 6x$

$$= 6 \times 22.5$$

$$= 135.0$$

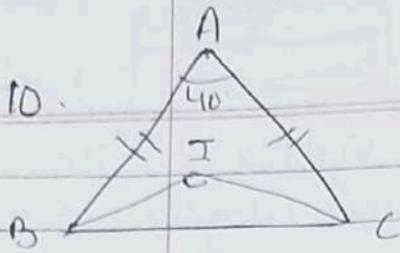
10 Let vertex $\angle = x$

base $\angle = 4x$ & $4x$

$$x + 4x + 4x = 180$$

$$9x = 180$$

$$x = \frac{180}{9} = 20$$



$$\therefore AB = AC$$

$$\angle B = \angle C \text{ (iso. } \Delta)$$

$$\angle A = 40^\circ \text{ (given)}$$

In ΔABC

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\angle A + \angle B + \angle B = 180^\circ \text{ (}\angle B = \angle C)$$

$$2\angle B = 180^\circ - \angle A$$

$$2\angle B = 180^\circ - 40^\circ$$

$$2\angle B = 140^\circ$$

$$\angle B = \frac{140^\circ}{2} = 70^\circ$$

So, $\angle ABC = \angle ACB = 70^\circ$
 as given BI, CI are
 bisectors of $\angle ABC$ and $\angle ACB$

$$\angle IB C = \frac{\angle ABC}{2} = \frac{70^\circ}{2} = 35^\circ$$

$$\angle IC B = \frac{\angle ACB}{2} = \frac{70^\circ}{2} = 35^\circ$$

In ΔIBC

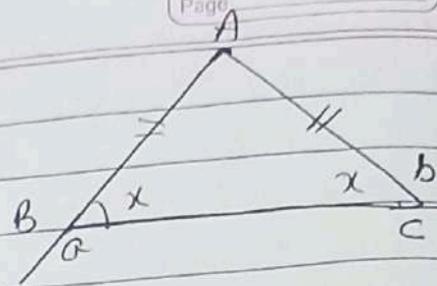
$$\angle B + \angle C + \angle I = 180^\circ$$

$$35^\circ + 35^\circ + \angle I = 180^\circ$$

$$\angle I = 180^\circ - 70^\circ$$

$$= 110^\circ$$

11



In ΔABC

$$AB = BC = AC \text{ (given)}$$

$$\angle a + \angle x = 180^\circ$$

— (1)

$$\angle b + \angle x = 180^\circ$$

— (2)

In ΔABC

$$\angle A = \angle B = \angle C = x$$

$$\angle A + \angle B + \angle C = 180^\circ$$

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

$$3x = 180^\circ$$

$$x = \frac{180^\circ}{3} = 60^\circ$$

So, In (1)

$$\angle a + 60^\circ = 180^\circ$$

$$\angle a = 180^\circ - 60^\circ$$

$$\angle a = 120^\circ$$

In (2)

$$\angle b + x = 180^\circ$$

$$\angle b + 60^\circ = 180^\circ$$

$$\angle b = 180^\circ - 60^\circ$$

$$= 120^\circ$$

∴ In ΔABC ,

$$BC = BA$$

$$\angle BCA = \angle BAC \text{ (ext } \angle$$

sum of int

$$\angle a = \angle BCA + \angle BCA$$

$$= 2\angle BCA$$

$$\begin{aligned} &= 2(180 - \angle b) \quad \left\{ \begin{array}{l} \angle BCA + \angle b = 180^\circ \\ \angle BCA = 180 - \angle b \end{array} \right. \\ &= 360 - 2b \end{aligned}$$

(i) Put $b = 130^\circ$
 $\angle a = 360 - 2(130^\circ)$
 $= 360 - 260$
 $= 100$

(ii) Put $b = 105^\circ$
 $\angle a = 360 - 2(105^\circ)$
 $= 360 - 210$
 $= 150$

EX-143

1 Q (i) 25cm, 65cm, 6cm

As we know if there is a Δ whose sum of the square of two sides are equal to square of the third side, then the triangle will be a right angled Δ

$$(65 \text{ cm})^2 = (25 \text{ cm})^2 + (6 \text{ cm})^2$$

$$4225 \text{ cm}^2 = 625 \text{ cm}^2 + 36 \text{ cm}^2$$

$$4225 \text{ cm}^2 = 4225 \text{ cm}^2$$

Yes, it is a right triangle

(ii) 11cm, 60cm, 61cm

$$(61 \text{ cm})^2 = (60 \text{ cm})^2 + (11 \text{ cm})^2$$

$$3721 \text{ cm}^2 = 3600 \text{ cm}^2 + 121 \text{ cm}^2$$

$$3721 \text{ cm}^2 = 3721 \text{ cm}^2$$

Yes, it is a right triangle

(iii), (iv) same as above

20 Height of the window = P

Let height = Ht.

By using Pythagoras Them.

$$(H)^2 = P^2 + B^2$$

$$(17)^2 = (Ht)^2 + (8)^2$$

$$289 = (Ht)^2 + 64$$

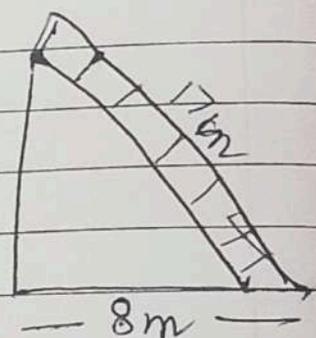
$$(Ht)^2 = 289 - 64$$

$$= 225$$

$$(Ht)^2 = (15 \times 15)$$

$$(Ht)^2 = (15)^2$$

$$Ht = 15 \text{ m}$$



30 Using Pyth Thm

$$(H)^2 = P^2 + B^2$$

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$= (15)^2 + (20)^2$$

$$= 225 + 400$$

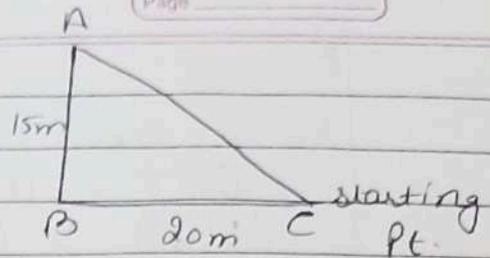
$$= 625 m^2$$

$$(AC)^2 = (25m \times 25m)$$

$$(AC)^2 = (25m)^2$$

$$AC = 25m$$

25m far is it from the starting point.



50 Length of the rectangle = 12cm
Breadth " " " = 5cm

In ΔAOB

$$(AB)^2 = (OA)^2 + (OB)^2$$

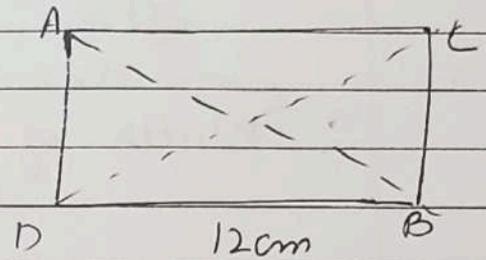
$$(AB)^2 = (5cm)^2 + (12cm)^2$$

$$(AB)^2 = 25 cm^2 + 144 cm^2$$

$$(AB)^2 = 169 cm^2$$

$$(AB)^2 = (13cm)^2$$

$$AB = 13cm$$



∴ Length of diagonals AB = 13cm

60 By Pyth. Thm

$$(H)^2 = P^2 + B^2$$

$$(25cm)^2 = (20m)^2 + (B)^2$$

$$625 cm^2 = 400m^2 + B^2$$

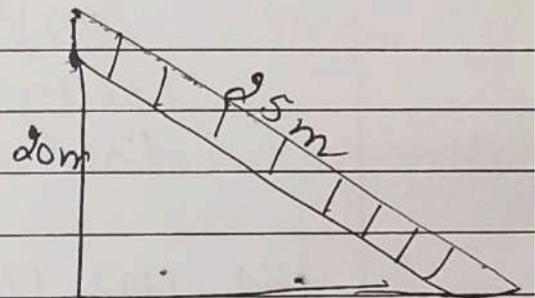
$$(625 - 400) m^2 = B^2$$

$$225 m^2 = B^2$$

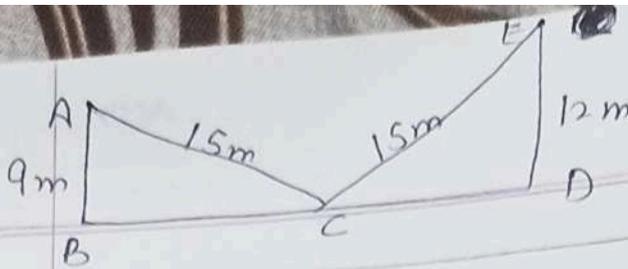
$$15m \times 15m = B^2$$

$$(15m)^2 = B^2$$

$$15m = B$$



Q7



In ΔABC

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$(15m)^2 = (9m)^2 + (BC)^2$$

$$225m^2 - 81m^2 = (BC)^2$$

$$144m^2 = (BC)^2$$

$$(12m \times 12m) = (BC)^2$$

$$(12m)^2 = (BC)^2$$

$$12m = BC$$

In rt. ΔECD

$$(EC)^2 = (ED)^2 + (CD)^2$$

$$(15m)^2 = (12m)^2 + (CD)^2$$

$$(225m^2 - 144m^2) = (CD)^2$$

$$81m^2 = (CD)^2$$

$$(9m)^2 = (CD)^2$$

$$9m = CD$$

\therefore Width of the street =

$$BD = BC + CD$$

$$= 12 + 9 = 21m$$

80

Pythagoras triplet

$$H^2 = p^2 + B^2$$

$$(37)^2 = (35)^2 + (12)^2$$

$$1369 = 1225 + 144$$

$$1369 = 1369$$

eii) (iii) (iv) same as (i)

90

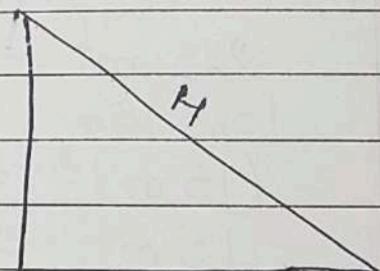
$$H^2 = p^2 + B^2$$

$$H^2 = (6^2 + 8^2) \text{ cm}^2$$

$$H^2 = 36 \text{ cm}^2 + 64 \text{ cm}^2$$

$$H^2 = 100 \text{ cm}^2$$

$$H = 10 \text{ cm}$$



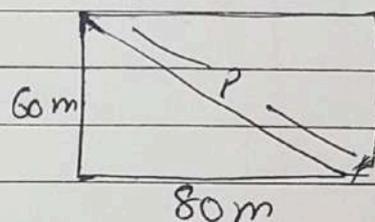
(ii) same as (i)
 (iii) $H^2 = P^2 + B^2$
 $= (6\text{m})^2 + (2.5\text{m})^2$
 $= 36\text{m}^2 + 6.25\text{m}^2$
 $= 42.25\text{m}^2$
 $= \frac{42.25\text{m}^2}{100}$
 $= \frac{5 \times 5 \times 13 \times 13}{10 \times 10}$

$$\begin{array}{r|l} 5 & 4225 \\ 5 & 845 \\ 13 & 169 \\ 13 & 13 \\ & 1 \end{array}$$

$$H^2 = \left(\frac{13 \times 5\text{m}}{10} \right)^2$$

$$H = 6.5\text{m}$$

100 Length of Rect = 80m
 Breadth " " = 60m



$$H^2 = P^2 + B^2$$

$$H^2 = (60\text{m})^2 + (80\text{m})^2$$

$$= 3600\text{m}^2 + 6400\text{m}^2$$

$$= 10000\text{m}^2$$

$$H^2 = (100\text{m})^2$$

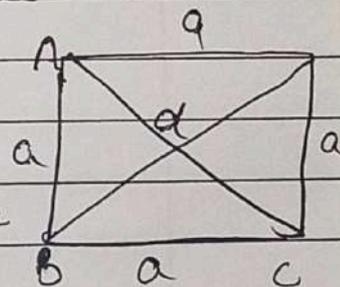
$$H = 100\text{m}$$

So person walks along the adjacent side, it will take $(60+80)\text{m} = 140\text{m}$
 so, $140\text{m} - 100\text{m} = 40\text{m}$

shorter to walk along the diagonals rather than adjacent sides

110 Let one side of square = a
 diagonal = d

Given square of diagonal = 128cm^2
 $d^2 = 128\text{cm}^2$



In $\triangle ABC$

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$(d)^2 = a^2 + a^2$$

$$d^2 = 2a^2$$

Put the value of $d^2 = 128 \text{ cm}^2$

$$128 \text{ cm}^2 = 2a^2$$

$$a^2 = \frac{128 \text{ cm}^2}{2}$$

$$a^2 = 64 \text{ cm}^2$$

$$a = (8 \text{ cm})^2$$

$$a = 8 \text{ cm}$$

So, one side of square = 8 cm

EX-18.1

1Q (i) H.W

$$\begin{aligned} \text{(ii)} \quad L &= 600 \text{ cm} \\ &= \frac{600 \text{ m}}{100} = 6 \text{ m} \end{aligned}$$

$$\begin{aligned} B &= 2 \text{ m } 30 \text{ cm} \\ &= \left(2 + \frac{30}{100}\right) \text{ m} \\ &= (2 + 0.3) \text{ m} \\ &= 2.3 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Area of Rectangle} &= L \times B \\ &= 6 \times 2.3 \\ &= 13.8 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Perimeter of Rect} &= 2(L+B) \\ &= 2 \times (6 + 2.3) \text{ m} \\ &= 2 \times (8.3) \text{ m} \\ &= 16.6 \text{ m} \end{aligned}$$

(iii), (iv) H.W

2Q (i) (ii) H.W

(iii) 350 mm

$$\begin{aligned} \text{one side of square} &= \frac{350 \text{ m}}{1000} = 0.35 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Area of square} &= \text{Side} \times \text{Side} \\ &= 0.35 \times 0.35 \\ &= 0.1225 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Perimeter of square} &= 4 \times \text{side} \\ &= 4 \times 0.35 \\ &= 1.40 \text{ m} \end{aligned}$$

(iv) One side of square =

$$= 1 \text{ m } 60 \text{ cm}$$

$$= \left(1 + \frac{60}{100}\right) \text{ m}$$

$$= (1 + 0.6) \text{ m}$$

$$= 1.6 \text{ m}$$

$$\begin{aligned} \text{Area of square} &= (\text{Side})^2 \\ &= (1.6 \times 1.6) \text{ m}^2 \\ &= 2.56 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Peri of square} &= 4 \times \text{side} \\ &= 4 \times 1.6 \\ &= 6.4 \text{ m} \end{aligned}$$

3Q Area of square =

$$256 \text{ cm}^2$$

$$(\text{side})^2 = 256 \text{ cm}^2$$

$$\text{side} = \sqrt{256}$$

$$= 16 \text{ m}$$

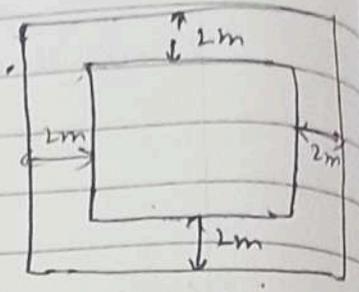
$$\begin{aligned} \text{Perimeter} &= 4 \times \text{side} \\ &= 4 \times 16 \\ &= 64 \text{ m} \end{aligned}$$

Q2 One side of square tile = 9 cm
 " " " " " floor bathroom = 720 cm

$$\begin{aligned} \text{no. of tiles required} &= \frac{\text{Area of floor}}{\text{Area of tile}} \\ &= \frac{720 \times 720 \text{ cm}^2}{9 \times 9 \text{ cm}^2} \\ &= 80 \times 80 = 6400 \text{ tiles} \end{aligned}$$

$$\begin{aligned} \text{cost of 1 tile} &= ₹ 7.50 \\ \text{cost of 6400 tiles} &= 7.50 \times 6400 \\ &= ₹ 48000 \end{aligned}$$

Q5 Given area of the path = 240 m²
 One outside of square lawn = x + 2 + 2 = x + 4



$$\begin{aligned} \text{Area of outer side} &= (x + 4)^2 \\ &= x^2 + 16 + 8x \end{aligned}$$

$$\text{Area of path} = \text{Area of outer square} - \text{Area of lawn}$$

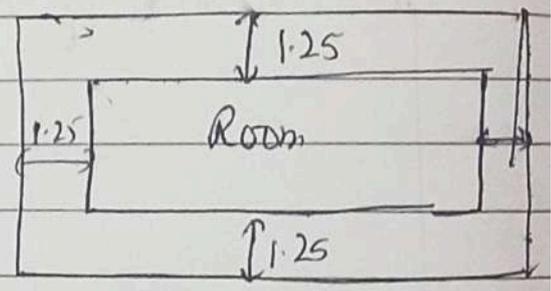
$$\begin{aligned} 240 &= (x + 4)^2 - x^2 \\ 240 &= x^2 + 16 + 8x - x^2 \end{aligned}$$

$$240 - 16 = 8x$$

$$\frac{224}{8} = x \Rightarrow x = 28 \text{ m}$$

$$\begin{aligned} \text{Area of lawn} &= (\text{side})^2 = x^2 \\ &= 28 \times 28 \\ &= 784 \text{ m}^2 \end{aligned}$$

Q6 Length of Room = 7.5 m
 Breadth " " = 5 m
 Area of " = 7.5 x 5 = 37.5 m²



$$\begin{aligned} \text{Length of the room with verandah} \\ &= (5 + 1.25 + 1.25) \text{ m} \\ &= 7.50 \text{ m} \end{aligned}$$

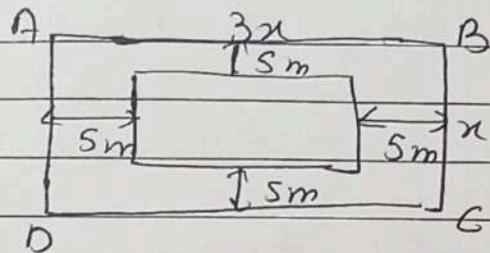
$$\begin{aligned} \text{Area of room with verandah} - \text{Area of} \\ \text{room} &= \text{Area of verandah} \\ &= (10 \times 7.50) - 37.5 \text{ m}^2 \\ &= (75 - 37.5) \text{ m}^2 \\ &= 37.5 \text{ m}^2 \end{aligned}$$

(ii) Cost of 1m cementing the floor of the verandah = ₹ 15

$$\begin{aligned} \text{Cost of } 37.5 \text{ m}^2 \text{ cementing the floor} \\ \text{of verandah} &= 37.5 \times 15 \\ &= ₹ 562.50 \end{aligned}$$

7 (i) Length = $3x$
In rectangle = EFGH
length = $(3x - 5 - 5)$
 $= (3x - 10) \text{ m}$

Breadth = $(x - 5 - 5)$
 $= (x - 10) \text{ m}$



A.T.O

$$\text{Area of path} = \text{Area of ABCD} - \text{Area of EFGH}$$

$$500 = (3x \times x) - [(3x - 10)(x - 10)]$$

$$500 = 3x^2 - [3x^2 - 30x - 10x + 100]$$

$$500 = 3x^2 - 3x^2 + 40x - 100$$

$$500 = 40x - 100$$

$$500 + 100 = 40x$$

$$600 = 40x$$

$$15 = x$$

$$15 \text{ m} = x$$

$$\begin{aligned} \text{Breadth} &= 15 \text{ m}, \text{ length} = 3 \times 15 \\ &= 45 \text{ m} \end{aligned}$$

80 Given length = 20m
Total fencing price = ₹ 1600
Perimeter price = ₹ 25

$$\begin{aligned} \text{Perimeter of Rectangle} &= \frac{\text{Total Price of fencing}}{\text{price of per m. of fencing}} \\ &= \frac{1600}{25} \\ &= 64\text{m} \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= 2 \times (L+B) \\ 64 &= 2 \times (20+B) \\ 64 &= 40 + 2B \\ 64 - 40 &= 2B \\ 24 &= 2B \\ 12 &= B \end{aligned}$$

$$\begin{aligned} \text{Area} &= L \times B \\ &= 20 \times 12 \\ &= 240\text{m}^2 \end{aligned}$$

90 81 hectare = 810000 m²
Area of square = (Side)²
810000 = (Side)²
900m = S

$$\begin{aligned} \text{Perimeter of square} &= 4 \times \text{side} \\ &= 4 \times 900 \\ &= 3600\text{m} \end{aligned}$$

$$\begin{aligned} \text{cost} &= 3600 \times 2.25 \\ &= ₹ 8100 \end{aligned}$$

100 Let length = x
Breadth = $\frac{3}{7}x$

$$\text{Perimeter} = 2 \times (L+B)$$

$$140 \text{ m} = 2 \times \left(x + \frac{3x}{7} \right)$$

$$70 \text{ m} = \frac{7x + 3x}{7}$$

$$70 \text{ m} = \frac{10x}{7}$$

$$\frac{70 \times 7}{10} = x$$

$$49 \text{ m} = x$$

$$L = x = 49 \text{ m}$$

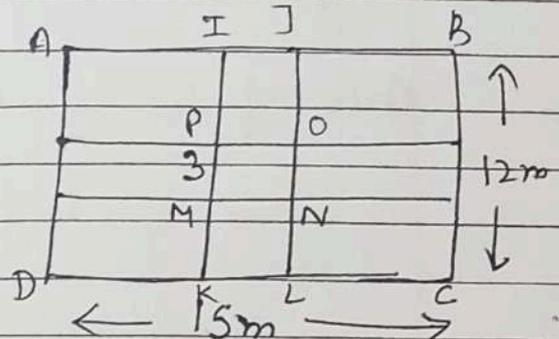
$$B = \frac{3x}{7} = \frac{3}{7} \times 49 = 21 \text{ m}$$

11Q $L = 10 \text{ m}$

$$B = 5 \text{ m}$$

$$\begin{aligned} \text{Perimeter} &= 2 \times (L + B) \\ &= 2 \times (10 + 5) \\ &= 2 \times 15 = 30 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Cost} &= 50 \times 30 \\ &= ₹ 1500 \end{aligned}$$



12Q Area of Rect. EFGH = $L \times B$
 $= 15 \times 3 = 45 \text{ m}^2$

Area of Rect IJKL = $L \times B$
 $= 12 \times 2 = 24 \text{ m}^2$

Area of MNPO = $L \times B$
 $3 \times 2 = 6 \text{ m}^2$

Area of shaded portion = Area of Rect EFGH
 Area of Rect IJKL - Area of Rect MNPO

$$45 + 24 - 6$$

$$69 - 6$$

$$63 \text{ m}^2$$

Ex-18.2

Q1 (i), (ii) H.W.

(iii) Base = 7.2m
height = 7dm
Base = 7.2 x 10 = 72dm
Area of $\Delta = \frac{1}{2} \times B \times H$

$$= \frac{1}{2} \times 72 \times 7$$

$$= \frac{504 \text{ dm}^2}{2} = 252 \text{ dm}^2$$

(iii) Area = 64 dm²
Base = 1.6 m
= 1.6 x 10 dm
= 16 dm

$$ht = \frac{2 \times \text{Area}}{\text{Base}}$$

$$= \frac{2 \times 64 \text{ dm}^2}{16 \text{ dm}}$$

$$= 8 \text{ dm}$$

(iv) Base = 10.5m
height = 8mm = $\frac{8}{1000}$ m

$$\text{Area of } \Delta = \frac{1}{2} \times B \times H$$

$$= \frac{1}{2} \times \frac{105}{10} \times \frac{8}{1000} \text{ m}^2$$

$$= \frac{21 \text{ m}^2}{500} = 0.042 \text{ m}^2$$

3Q (i) H.W
(ii) Area = 36 dm²
Ht = 90cm
Area = 3.6 x 10 x 10
= 360 cm²

$$\text{Base} = \frac{2 \times \text{Area}}{\text{Ht}}$$

$$= \frac{2 \times 360}{90}$$

$$= 8 \text{ cm}$$

2Q (i) H.W

(ii) Area = 1500 mm²
= 1500 cm²
10 x 10

$$\text{Base} = 7.5 \text{ cm}$$

$$ht = \frac{2 \times \text{Area}}{\text{Base}}$$

$$= \frac{2 \times 15 \text{ cm}^2}{7.5 \text{ cm}}$$

$$= 2 \times 2 \text{ cm}$$

$$= 4 \text{ cm}$$

(iii) Area = 3.6 m²
ht = 1.8m
Base = $\frac{2 \times \text{Area}}{\text{ht}}$

$$= \frac{2 \times 3.6 \text{ m}^2}{1.8}$$

$$= 4 \text{ m}$$

Q 4 H.W

50 Area of $\Delta = 0.8 \text{ m}^2$
 base = 20 cm
 $= \frac{20 \text{ m} - 0.2 \text{ m}}{100}$

$$\text{ht} = \frac{2 \times \text{Area}}{\text{Base}}$$

$$= \frac{2 \times 0.8}{0.2} = 8 \text{ m}$$

60 Given ratio = 8:5

Let Base = $8x$

ht = $5x$

Area = 320 cm^2

$$\text{Area of } \Delta = \frac{1}{2} \times B \times H$$

$$320 = \frac{1}{2} \times 8x \times 5x$$

$$320 = 20x^2$$

$$320 = x^2$$

$$20$$

$$\sqrt{16} = x$$

$$4 \text{ cm} = x$$

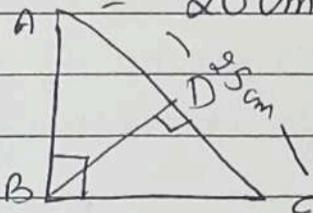
$$\text{Base} = 8 \times 4 \text{ cm}$$

$$= 32 \text{ cm}$$

$$\text{ht} = 5 \times 4 \text{ cm}$$

$$= 20 \text{ cm}$$

Q7



BC = base, AB = Perpendicular

AC = hypotenuse

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$(25)^2 = (AB)^2 + (24)^2$$

$$625 = (AB)^2 + 576$$

$$625 - 576 = (AB)^2$$

$$49 = (AB)^2$$

$$(7)^2 = (AB)^2$$

$$7 = AB$$

$$\text{Area of } \Delta = \frac{1}{2} \times B \times H$$

$$= \frac{1}{2} \times BC \times AB$$

$$= \frac{1}{2} \times 24 \times 7 \text{ cm}^2$$

$$= 84 \text{ cm}^2$$

Q7 In ΔABC

$$\text{Area of } \Delta = \frac{1}{2} \times B \times H$$

$$84 \text{ cm}^2 = \frac{1}{2} \times AC \times BD$$

$$84 \text{ cm}^2 = \frac{1}{2} \times 25 \times BD$$

$$BD = \frac{84 \times 2 \text{ cm}^2}{25 \text{ cm}}$$

$$= \frac{168 \text{ cm}}{25}$$

$$= 6.72 \text{ cm}$$

EX-183

Q1 Circumference of circle = 220m

$$2\pi r = 220 \text{ m}$$

$$2 \times \frac{22}{7} \times r = 220 \text{ m}$$

$$r = \frac{220 \times 7}{44}$$

$$r = 35 \text{ m}$$

$$\begin{aligned} \text{(i) Diameter} &= 2 \times r \\ &= 2 \times 35 \\ &= 70 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{(ii) Area} &= \pi r^2 \\ &= \frac{22}{7} \times 35 \times 35 \end{aligned}$$

$$= 110 \times 35 = 3850 \text{ m}^2$$

Q2 Area of circle = 154 cm²

$$\pi r^2 = 154 \text{ cm}^2$$

$$\frac{22}{7} r^2 = 154 \text{ cm}^2$$

$$r^2 = \frac{154 \times 7}{22}$$

$$r^2 = 7 \times 7$$

$$r^2 = (7)^2$$

$$r = 7 \text{ cm}$$

$$\begin{aligned} \text{Circumference} &= 2\pi r \\ &= 2 \times \frac{22}{7} \times 7 \end{aligned}$$

$$= 44 \text{ cm}$$

Q3 Radius of circular sheet

$$= 6 \text{ cm } (C_1)$$

Radius of removed circle

$$= 4 \text{ cm } (C_2)$$

Area of remaining sheet = Area of C_1 - Area of C_2

$$= \pi R_1^2 - \pi R_2^2$$

$$= \pi (6^2 - 4^2)$$

$$= \pi (36 - 16)$$

$$= \frac{22}{7} (20)$$

$$= \frac{440}{7} = 62.86 \text{ m}^2$$

Q4 Dia of wheel = 70 cm
radius = $\frac{70}{2} = 35 \text{ cm}$

$$\begin{aligned} \text{Circumference} &= 2\pi r \\ &= 2 \times \frac{22}{7} \times 35 \text{ cm} \end{aligned}$$

$$= 220 \text{ cm}$$

$$\text{no. of turns} = \frac{11000}{220}$$

$$= 50 \text{ times}$$

Q5 Given Ratio = 5:7

$$\text{Let } R_1 = 5x$$

$$R_2 = 7x$$

(i) Ratio of their circumferences =

$$\frac{2\pi R_1}{2\pi R_2}$$

$$= \frac{2\pi 5x}{2\pi 7x} = \frac{5}{7}$$

$$= \frac{2\pi 5x}{2\pi 7x} = \frac{5}{7}$$

$$5:7$$

$$5:7$$

(ii) Ratio of their Area

$$\begin{aligned} &= \frac{\pi R_1^2}{\pi R_2^2} \\ &= \frac{\pi(5x)^2}{\pi(7x)^2} \\ &= \frac{25x^2}{49x^2} \\ &= 25 : 49 \end{aligned}$$

$$2\pi r = 4 \times \text{side}$$

$$2 \times \frac{22}{7} \times r = 4 \times 44$$

$$r = 4 \times 44 \times \frac{7}{22 \times 2}$$

$$r = 28$$

$$\begin{aligned} \text{Area of circle} &= \pi r^2 \\ &= \frac{22}{7} \times 28 \times 28 \end{aligned}$$

$$= 2464 \text{ cm}^2$$

Q6 Two circles area in ratio = 49 : 81

$$\frac{\pi R_1^2}{\pi R_2^2} = \frac{49}{81}$$

$$\frac{R_1^2}{R_2^2} = \frac{49}{81}$$

$$\frac{R_1}{R_2} = \frac{7}{9}$$

$$\frac{R_1}{R_2} = \frac{\sqrt{49}}{\sqrt{81}} = \frac{\sqrt{7 \times 7}}{\sqrt{9 \times 9}}$$

$$\frac{R_1}{R_2} = \frac{7}{9}$$

Ratio of their circumference

$$= \frac{2\pi R_1}{2\pi R_2}$$

$$= \frac{2\pi 7}{2\pi 9} = \frac{7}{9}$$

$$= 7 : 9$$

Q7 circumference of circle =

Peri of square one side of square = 44cm

Peri of square = 4x side

circumference of circle = Peri of circle

Q8 One side of equilateral Δ = 11cm

$$\text{Peri} = 11 + 11 + 11 = 33 \text{ cm}$$

Peri of Δ = circumference of circle

$$33 = 2\pi r$$

$$33 = 2 \times \frac{22}{7} \times r$$

$$\frac{33 \times 7}{2 \times 22} = r$$

$$5.25 \text{ cm} = r$$

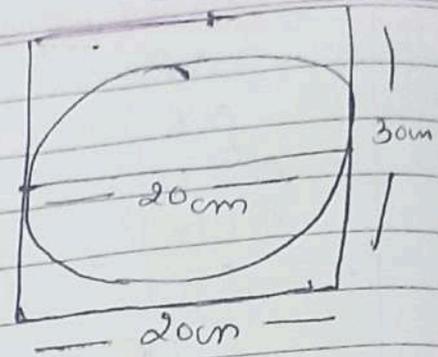
Area of circle = πr^2

$$= \frac{22}{7} \times 5.25 \times 5.25$$

$$= 86.625 \text{ cm}^2$$

Q9

$$\begin{aligned} \text{Length of Rect} &= 30\text{cm} \\ \text{Breadth " " " } &= 20\text{cm} \\ \text{dia of circle} &= 20\text{cm} \\ \text{radius} &= \frac{20}{2} = 10\text{cm} \end{aligned}$$



$$\begin{aligned} \text{Area of Rect} &= L \times B \\ &= 20 \times 30 \\ &= 600\text{cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Area of circle} &= \pi r^2 \\ &= \frac{22}{7} \times 10 \times 10\text{cm}^2 \end{aligned}$$

$$= \frac{2200\text{cm}^2}{7} = 314.29\text{cm}^2$$

$$\begin{aligned} \text{Area of remaining sheet} &= \text{area of Rect} - \text{area of circle} \\ &= 600 - 314.29 \\ &= 285.71\text{cm}^2 \end{aligned}$$

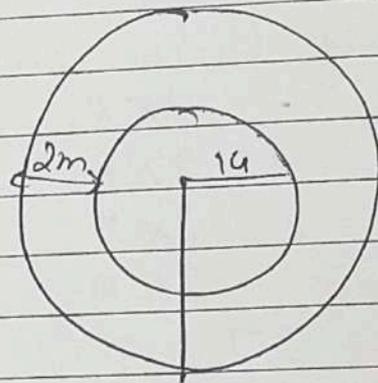
Q10

$$\begin{aligned} \text{Circumference} &= 2\pi r \\ 88\text{m} &= 2\pi r \\ 88\text{m} &= 2 \times \frac{22}{7} \times r \end{aligned}$$

$$\frac{88 \times 7}{22 \times 2} = r$$

$$14\text{m} = r$$

$$14\text{m} = r$$



Since, the road is 2m wide and a fence is to be put on the outer boundary, so, the now radius = $(14+2)\text{m}$
 $= 16\text{m}$

$$\begin{aligned} \text{circumference} &= 2\pi r \\ &= 2 \times \frac{22}{7} \times 16\text{m} \end{aligned}$$

$$= \frac{44 \times 16\text{m}}{7} = \frac{704\text{m}}{7}$$

Date _____
Page _____

Length of Rect = 4cm
 Breadth " " = 1cm
 Area = L x B
 = 4 x 1 cm² = 4cm²

Area of Remaining sheet =

Area of circular sheet - Area of 2 circles -
 Area of Rectangle

$$\left(\frac{7128}{7} - \frac{8910}{70} - 4 \right) \text{cm}^2$$

$$\left(\frac{71280 - 8910 - 280}{70} \right) \text{cm}^2$$

$$\left(\frac{71280 - 9190}{70} \right) \text{m}^2 = \frac{62090}{70} \text{m}^2$$

$$= 887 \text{m}^2 \text{ approx}$$

Or

$$\left(\frac{7128}{7} - \frac{8910}{70} - 4 \right) \text{m}^2$$

$$= \left(1018.2 - 127.28 - 4 \right) \text{m}^2$$

$$= 887 \text{m}^2 \text{ app}$$

130 Area of ABCD = L x B

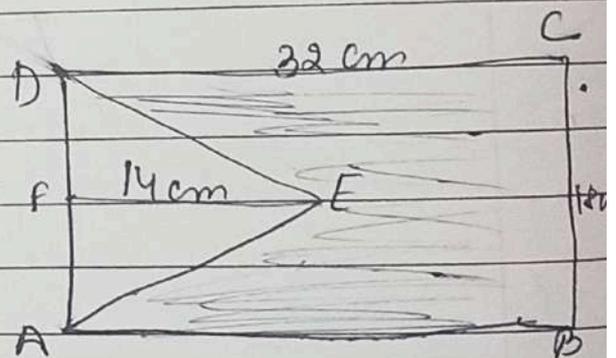
$$= 32 \times 18 \text{cm}^2$$

$$= 576 \text{cm}^2$$

In $\triangle ADE$

$$EF = 14 \text{cm}$$

$$\text{Area of } \triangle ADE = \frac{1}{2} \times b \times h$$



$$= \frac{1}{2} \times 18 \times 14 \text{ cm}$$

$$= 126 \text{ cm}^2$$

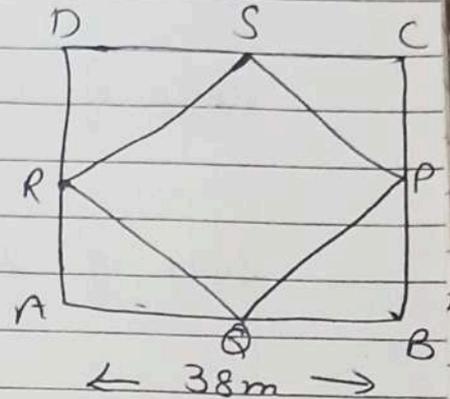
$$\begin{aligned} \text{Area of shaded portion} &= \text{Area of ABCD} - \text{Area of } \triangle ADE \\ &= 576 \text{ cm}^2 - 126 \text{ cm}^2 \\ &= 450 \text{ cm}^2 \end{aligned}$$

Q19. Area of square ABCD = 38×38
 $= 1444 \text{ m}^2$

$$\text{Area of } \triangle RAO = \frac{1}{2} \times B \times H$$

$$= \frac{1}{2} \times 19 \times 19 \text{ m}^2$$

$$= \frac{361}{2} \text{ m}^2$$



As $\triangle RAO = \triangle RDS = \triangle SCP = \triangle PQB$

So area of 4 \triangle s = $4 \times \frac{361}{2} \text{ m}^2$

$$\begin{aligned} \text{Area of shaded portion} &= \text{Area of ABCD} - \text{Area of 4 triangles} \\ &= (1444 - \frac{4 \times 361}{2}) \text{ m}^2 \\ &= (1444 - 722) \text{ m}^2 \\ &= 722 \text{ m}^2 \end{aligned}$$

$$722 \text{ m}^2$$

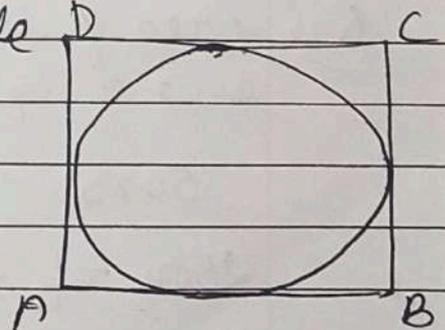
50 Side of square = Dia of circle D

$$42 \text{ m} = d$$

$$42 \text{ m} = 2 \times r$$

$$\frac{42}{2} = r$$

$$21 \text{ m} = r$$



Area of shaded portion = Area of circle

$$\pi r^2 = \frac{22}{7} \times 21 \times 21 \text{ cm}^2$$

$$= 66 \times 21 \text{ m}^2$$

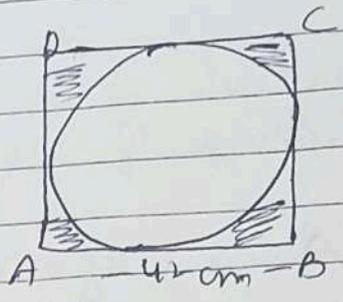
$$= 1386 \text{ m}^2$$

OR

Area of square ABCD

$$= 42 \times 42 \text{ m}^2$$

$$= 1764 \text{ m}^2$$



side of square = dia of circle

$$42 \text{ m} = d$$

$$42 = 2 \times r$$

$$\frac{42}{2} = r$$

$$21 \text{ m} = r$$

Area of circle = πr^2

$$= \frac{22}{7} \times 21 \times 21$$

$$= 1386 \text{ m}^2$$

Area of shaded portion =

Area of ABCD - Area of circle

$$= (1764 - 1386) \text{ m}^2$$

$$= 378 \text{ m}^2$$

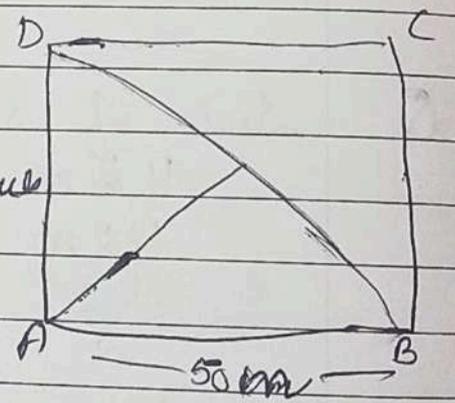
Q16 Area of the cow cannot graze =

Area of sq. ABCD - Area of $\frac{1}{4}$ of circle

$$50 \times 50 - \frac{1}{4} \pi r^2$$

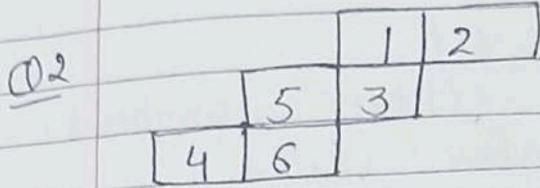
$$2500 - \frac{1}{4} \times \frac{22}{7} \times 14 \times 14 \text{ cm}^2$$

$$(2500 - 154) \text{ m}^2 = 2346 \text{ m}^2$$



Ex-16.1

- Q1 (i) cylinder (ii) Cone (iii) cuboid
(iv) Cube



- Q3 (i) AB
(ii) KL

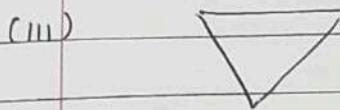
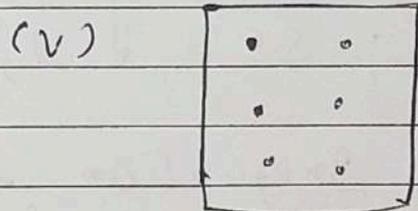
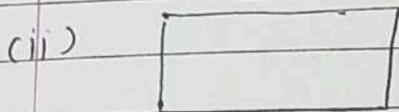
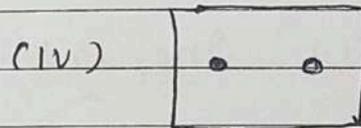
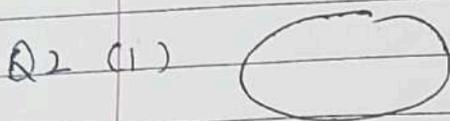
Q4 $x = 2, y = 4, z = 6$

- Q5 (ii) (iii) (iv) (v) (vi) is cube

Ex-16.4

- Q1 (i) (a) Top View (b) side view (c) front view

- (ii) (a) Top view (b) side view (c) front view
(iii) (a) front view (b) side view (c) Top view
(iv) (a) side view (b) Top view (c) front view



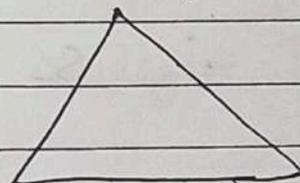
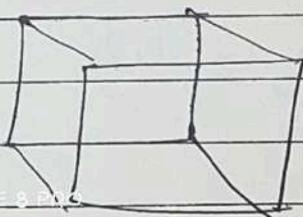
Q3 (a) Dice

(ii) Triangular Prism

Q4, Q5 H.W

Q3 (i) Dice

(ii) Triangular Prism



Ex 6.1

Q1 (i)

24 : 36

$$\frac{24}{36} = \frac{2}{3} = 2:3 \underline{Q}$$

(ii)

1.7 : 0.34

$$\frac{1.7}{0.34} = \frac{17}{10} \times \frac{100}{34}$$

$$\frac{10}{2} = \frac{5}{1} = 5:1 \underline{Q}$$

(iii)

$5\frac{1}{4} : 2$

$$\frac{21}{4} : 2$$

$$\frac{21}{4} = \frac{21}{4 \times 2} = \frac{21}{8} = 21:8 \underline{Q}$$

(iv)

40 kg : 500 g

$$\begin{aligned} \text{In 1 kg} &= 1000 \text{ g} \\ 40 \text{ kg} &= 40 \times 1000 \text{ g} \\ &= 40000 \text{ g} \end{aligned}$$

$$\begin{aligned} 40000 \text{ g} &: 500 \text{ g} \\ &= \frac{40000}{500} \underline{Q} \\ &= \frac{80}{1} = 80:1 \underline{Q} \end{aligned}$$

(v)

40 min : 2 hrs

In 1 hr = 60 min

$$\begin{aligned} \text{In 2 hr} &= 60 \times 2 \\ &= 120 \text{ min} \end{aligned}$$

40 min : 120 min

$$\frac{40 \text{ min}}{120 \text{ min}}$$

$$= \frac{1}{3} = 1:3 \underline{Q}$$

(vi) 5 months : 1.5 years

In 1 year = 12 months

$$\begin{aligned} 1.5 \text{ year} &= 1.5 \times 12 \\ &= \frac{3 \times 5}{2} \times 12 \end{aligned}$$

$$= 18 \text{ months}$$

5 months : 18 months

$$\frac{5 \text{ months}}{18 \text{ months}}$$

$$= \frac{5}{18} \underline{Q} = 5:18 \underline{Q}$$

Q2

(i) 1:2 or 3:4

$$\frac{1}{2} \text{ or } \frac{3}{4}$$

LCM of 2, 4

$$\begin{array}{r|l} 2 & 2-4 \\ \hline & \end{array}$$

$$\begin{array}{r|l} 2 & 1-2 \\ \hline & \end{array}$$

$$\begin{array}{r|l} & 1-1 \\ \hline & \end{array}$$

$$= 2 \times 2 = 4$$

$$\frac{1 \times 2}{2 \times 2} \text{ or } \frac{3 \times 1}{4 \times 1}$$

$$\frac{2}{4} \text{ or } \frac{3}{4}$$

$$\frac{2}{4} < \frac{3}{4}$$

$$1:2 < 3:4$$

Q2 (ii), (iii), (iv) H.W

Q3 Given ratio = 3:5:7
Sum of ratio = 3+5+7
= 15

Sum of three angles of Δ
= 180°

1st angle = $\frac{3}{15} \times 180$

= 36°

Second angle = $\frac{5}{15} \times 180$

= 60°

Third angle = $\frac{7}{15} \times 180$

= 84°

Q4 Given ratio = 7:5

difference = 96

let first ratio = $7x$

let second ratio = $5x$

ATQ $7x - 5x = 96$

$2x = 96$

$x = 48$

2

$x = 48$

So, first ratio = $7x$

= 7×48

= 336

Second ratio = $5x$

= 5×48

= 240

Q5, Q6 H.W (same as Q4)

Q7 Total Amount = ₹1400

let second ratio = $4x$

Third ratio = $5x$

let Common ratio = x

first ratio =

$\frac{2}{3}$ of $4x$

= $\frac{2}{3} \times 4x = \frac{8x}{3}$

Sum of ratio

1st + 2nd + 3rd = 1400

$\frac{8x}{3} + 4x + 5x = 1400$

$8x + 12x + 15x = 1400 \times 3$

$35x = 1400 \times 3$

$x = \frac{1400 \times 3}{35}$

35

$x = 120$

So 1st = $\frac{8x}{3} = \frac{8}{3} \times 120$

= ₹320

2nd = $4x = 4 \times 120$

₹480

3rd = $5x = 5 \times 120$

₹600

Q8 H.W (Same as Q3)

Q9 Total bottles = 108
Given ratio = $\frac{1}{5} : \frac{1}{7}$

LCM of 5, 7 = 35

$\frac{1}{5} \times 35 : \frac{1}{7} \times 35$

= 7 : 5

Sum of ratio = 7 + 5
= 12

A got = $\frac{7}{12} \times 108$
= 63 bottles

B got = $\frac{5}{12} \times 108$
= 45 bottles

Q10 Given ratio = 1 : 2 : 3 : 4

Sum of ratio = 1 + 2 + 3 + 4
= 10

Perimeter of quadrilateral
= 40 cm

first side = $\frac{1}{10} \times 40 = 4$ cm

second side = $\frac{2}{10} \times 40 = 8$ cm

Third side = $\frac{3}{10} \times 40 = 12$ cm

fourth side = $\frac{4}{10} \times 40 = 16$ cm

Q11

Ratio of their
investments =

14000 : 21000 : 28000
2 : 3 : 4 (using table)

Sum of ratio =

2 + 3 + 4 = 9

A's profit = $\frac{2}{9} \times 39690$

= 2 × 4410
= ₹ 8820

B's profit = $\frac{3}{9} \times 39690$

= ₹ 13230

C's profit = $\frac{4}{9} \times 39690$

= ₹ 17640

Ex 6.2

Q1 (i) a b c d
6, 21, 12, 4

Product of extremes = Product of means

$$a \times d = b \times c$$

$$6 \times 4 = 21 \times 12$$

$$24 = 252 \text{ not Prop.}$$

(ii), (iii), (iv), (v), (vi) same as (i)

$$(v) \frac{1}{3} : \frac{1}{4} :: \frac{1}{9} : x$$

$$\frac{\frac{1}{3}}{\frac{1}{4}} = \frac{\frac{1}{9}}{x}$$

$$\frac{4}{3} = \frac{1}{9x}$$

$$4 \times 9x = 1 \times 3$$

$$x = \frac{1 \times 3}{36}$$

$$x = \frac{1}{12} \underline{A}$$

Q2 (i) 6 : 9 :: x : 15

$$\frac{6}{9} = \frac{x}{15} \quad \checkmark$$

$$6 \times 15 = 9 \times x$$

$$x = \frac{6 \times 15}{9}$$

$$x = 10 \underline{A}$$

(ii), (iii) H.W

(v) x : 3 :: 0.4 : 0.5

$$\frac{x}{3} = \frac{0.4}{0.5}$$

$$\frac{x}{3} = \frac{4}{5}$$

$$x \times 5 = 4 \times 3$$

$$x = \frac{4 \times 3}{5}$$

$$x = \frac{12}{5} \underline{A}$$

$$= 2.4 \underline{A}$$

(vi) x : 1.5 :: 6.3 : 4.5

$$\frac{x}{1.5} = \frac{6.3}{4.5}$$

$$\frac{x}{1.5} = \frac{6.3}{4.5}$$

$$x \times 4.5 = 6.3 \times 1.5$$

$$x = \frac{6.3 \times 1.5}{4.5}$$

$$x = \frac{6.3 \times 1.5}{4.5 \times 10}$$

$$x = \frac{21}{10}$$

$$\boxed{x = 2.1}$$

Q3 (i) 18, 54, 6
let 4th prop. = x

$$18:54::6:x$$

$$\frac{18}{54} = \frac{6}{x}$$

$$18 \times x = 6 \times 54$$

$$x = \frac{6 \times 54}{18}$$

$$\boxed{x = 18}$$

(ii), (iii), (iv), (v), (vi) HW

Q4 (i) 2, 4

let 3rd prop = x

$$2:4::4:x$$

$$\frac{2}{4} = \frac{4}{x}$$

$$2 \times x = 4 \times 4$$

$$x = \frac{4 \times 4}{2}$$

$$\boxed{x = 8}$$

(ii), (iii), (iv), (v), (vi) HW

Q5 (i) 36, 25

mean prop = b = \sqrt{ac}

$$= \sqrt{36 \times 25}$$
$$= 6 \times 5 = 30 \text{ A}$$

(ii) mean prop =

$$\sqrt{1.2 \times 0.3}$$

$$\sqrt{0.36}$$

$$= 0.6$$

(iii) mean prop =

$$\sqrt{2.5 \times 0.9}$$

$$\sqrt{\frac{25 \times 9}{10 \times 10}}$$

$$= \frac{5 \times 3}{10} = \frac{15}{10}$$

$$= 1.5$$

(iv) H.W

(v) $\frac{1}{9}$ and 4

$$\text{mean prop} = \sqrt{\frac{1}{9} \times 4}$$

$$= \frac{1}{3} \times 2$$

$$= \frac{2}{3} \text{ A}$$

(vi) H.W

Q6 let 3rd prop = x
 $9:21::x:77$
 $\frac{9}{21} = \frac{x}{77}$
 $x \times 21 = 9 \times 77$
 $x = \frac{9 \times 77}{21}$
 $x = 33$

$150 \times x = 300 \times 300$
 $x = \frac{300 \times 300}{150}$
 $x = 600$ A
 Phy books = 600 B

Q7 H.W

Q8 $9:x::x:16$
 $\frac{9}{x} = \frac{x}{16}$
 $x \times x = 9 \times 16$
 $x^2 = 9 \times 16$
 $x = \sqrt{9 \times 16}$
 $= 3 \times 4$
 $x = 12$ n

Q10 Given ratio = 5:7
 L:B = 5:7
 let length = x
 Breadth = 56m

$5:7 = x:56m$
 $\frac{5}{7} = \frac{x}{56m}$
 $x \times 7 = 5 \times 56m$
 $x = \frac{5 \times 56m}{7}$
 $x = 40m$

So length = 40m

Q9 G.K To Maths
 $150:300$

Maths To Phy
 $300:x$

let Phy books = x

Q11 let height of pole = x ,
 height of tower = 60m

$30m : x = 30 : 40$
 shadow of pole = 30m
 shadow of tower = 40m

G.K : Maths :: Maths : Phy
 $150 : 300 :: 300 : x$
 $\frac{150}{300} = \frac{300}{x}$

$30m : 40m = x : 60m$
 $\frac{30}{40} = \frac{x}{60}$
 $30 \times 60m = x \times 40$

$$x = \frac{30 \times 60 \text{ m}}{2}$$

$$x = \frac{90 \text{ m}}{2}$$

$$x = 45 \text{ m}$$

Ex 7.1

igno-

Q1 In 20 hrs = 12 farmers

In 1 hr = 12×20

In 15 hrs = $\frac{12 \times 20}{15}$

= 16 farmers

Q2 56 books weight = 8 kg

1 book weight = $\frac{8}{56}$ kg

= $\frac{1}{7}$ kg

112 books weight = $\frac{1}{7} \times 112$

= 16 kg

(ii) 8 kg weight of = 56 books

1 kg weight of = $\frac{56}{8}$ books

5 kg weight of = $\frac{56}{8} \times 5$

= 35 books

Q3

In 30 mins John types = 450 words

In 1 mins John types = $\frac{450}{30}$

In 7 mins John = $\frac{450}{30} \times 7$

= 105 words

Q4 In 6 days work = ₹ 750

In 1 day's work = $\frac{750}{6}$

In 23 day's work = $\frac{750}{6} \times 23$

= 125×23

= ₹ 2875

Q5 In 20 days to build a wall we need = 15 workers

In 1 day " " " = 15×20

In 12 day " " " = 15×20

12

= 25 workers

Q6 H.W

Q7 For 400 persons = 23 days

For 1 person = 23×400

For 460 persons = $\frac{23 \times 400}{460}$

460

2

= 20 days

Q8 H.W

Q9 Lara can finish a book in 30 days if he read

21 pages everyday

So, no. of pages = 21×30 pages

18 pages everyday will require = $\frac{21 \times 30}{18}$

18

= 35 days.

Q10 In 42 hr to complete work need = 17 men
 In 1 hr " " " " " " = 17×42
 In 34 hr " " " " " " = $\frac{17 \times 42}{34}$

Q11 1 period of = 35 mins
 8 periods of = 35×8 mins
 7 periods of = $\frac{35 \times 8}{7}$ mins
 = 40 mins

Q12 500 soldiers enough food for = 30 days
 For 1 soldier " " " " = 30×500
 375 (500 - 125) soldiers " " " " = $\frac{30 \times 500}{375}$
 $\frac{30 \times 500}{375} = \frac{30 \times 4}{3} = 40$ days

Ex 7.2

Q1 Time taken by A = 24 days
A's 1 day work = $\frac{1}{24}$

Time taken by B = 30 days
B's 1 day work = $\frac{1}{30}$

(A+B)'s 1 day work = $\frac{1}{24} + \frac{1}{30}$

LCM of 24, 30

$$2 \mid 24-30$$

$$2 \mid 12-15$$

$$2 \mid 6-15$$

$$3 \mid 3-15$$

$$5 \mid 1-5$$

$$1-1$$

$$= 2 \times 2 \times 2 \times 3 \times 5 = 120$$

$$= \frac{1 \times 5 + 1 \times 4}{120} = \frac{5+4}{120} = \frac{9}{120}$$

Time taken by both to finish the work

$$= \frac{120}{9} = \frac{40}{3} = 13\frac{1}{3} \text{ days}$$

Q2 H.W

Q3 A and B together can finish a piece of work in = 6 days

(A+B)'s 1 day work = $\frac{1}{6}$ d.

A alone can do in = 9 days

A's 1 day work = $\frac{1}{9}$

B's alone 1 day work = $\frac{1}{6} - \frac{1}{9}$

$$= \frac{9-6}{54} = \frac{3}{54} = \frac{1}{18}$$

B's alone can do a piece of work in - 18 days

Q4 H.W (Same as Q3)

Q5 A can do a piece of work in = 8 days
A's 1 day work = $\frac{1}{8}$

B can do a piece of work in = 12 days
B's 1 day work = $\frac{1}{12}$

C can do a piece of work = 15 days
C's 1 day work = $\frac{1}{15}$

(A+B+C)'s 1 day work = $\frac{1}{8} + \frac{1}{12} + \frac{1}{15}$

$$= \frac{1 \times 15 + 1 \times 10 + 1 \times 8}{120}$$

$$= \frac{15 + 10 + 8}{120} = \frac{33}{120}$$

$$= \frac{11}{40}$$

LCM of 8, 12, 15

$$\begin{array}{r|l} 2 & 8-12-15 \\ 2 & 4-6-15 \\ 2 & 2-3-15 \\ 3 & 1-3-15 \\ 5 & 1-1-5 \\ & 1-1-1 \end{array}$$

$$= 2 \times 2 \times 2 \times 3 \times 5 = 120$$

(A+B+C) can do a piece of work together
in = $\frac{40}{11} = 3\frac{7}{11}$ days

Q6 H.W

(Hint = (A+B+C)'s 1 day work - (A's 1 day work + B's 1 day work))

$$C's\ 1\ day\ work = \left(\frac{1}{8} - \left(\frac{1}{20} + \frac{1}{24} \right) \right)$$

Q7

A can finish a work in = 6 days

B can finish a work in = 4 days

$$\text{A's 1 day work} = \frac{1}{6}$$

$$\text{B's 1 day work} = \frac{1}{4}$$

$$\text{A's 2 days work} = 2 \times \frac{1}{6} = \frac{1}{3}$$

$$\text{Remaining work} = 1 - \frac{1}{3} = \frac{3-1}{3} = \frac{2}{3}$$

$$\text{Work done by A and B in a day} = \frac{1}{6} + \frac{1}{4}$$

$$= \frac{2+3}{12} = \frac{5}{12}$$

$$\text{Time taken by them to complete the work is} = \frac{12}{5}$$

$$\text{Time take by them to complete } \frac{2}{3} \text{ rd Part is} =$$

$$\frac{12}{5} \times \frac{2}{3} = \frac{8}{5}$$

$$\text{Total time} = 2 + \frac{8}{5} = \frac{10+8}{5} = \frac{18}{5} = 3\frac{3}{5} \text{ day}$$

Q8

$$\text{1 day work of A+B+C} = \frac{1}{15} + \frac{1}{12} + \frac{1}{20}$$

LCM of 15, 12, 20

$$\begin{array}{r|l} 2 & 15-12-20 \\ \hline \end{array}$$

$$\begin{array}{r|l} 2 & 15-6-10 \\ \hline \end{array}$$

$$\begin{array}{r|l} 3 & 15-3-5 \\ \hline \end{array}$$

$$\begin{array}{r|l} 5 & 5-1-5 \\ \hline \end{array}$$

$$\begin{array}{r|l} & 1-1-1 \\ \hline \end{array}$$

$$2 \times 2 \times 3 \times 5 = 60$$

$$= \frac{4+5+3}{60} = \frac{12}{60} = \frac{1}{5}$$



Two day's work of (A+B+C) together = $2 \times \frac{1}{5} = \frac{2}{5}$

$$\text{Remaining work} = 1 - \frac{2}{5} = \frac{5-2}{5} = \frac{3}{5}$$

$$(A+B) \text{ together work} = \frac{1}{15} + \frac{1}{12}$$

$$= \frac{4+5}{60} = \frac{9}{60} = \frac{3}{20}$$

Day's taken by A and B to finish the

$$\text{work} = \frac{3}{5} \div \frac{3}{20}$$

$$= \frac{3}{5} \times \frac{20}{3} = 4 \text{ days.}$$

Q9 Time taken by (A+B) to finish the work = 18 days
(A+B)'s 1 day work = $\frac{1}{18}$

Time taken by (B+C) to finish the work = 24 days
(B+C)'s 1 day work = $\frac{1}{24}$

Time taken by (C+A) to finish the work = 36 days
(C+A)'s 1 day work = $\frac{1}{36}$

$$\begin{aligned} 2(A+B+C)'s \text{ 1 day's work} &= \left(\frac{1}{24} + \frac{1}{18} + \frac{1}{36} \right) \\ &= \left(\frac{3+4+2}{72} \right) \\ &= \frac{9}{72} = \frac{1}{8} \end{aligned}$$

$$(A+B+C)'s \text{ 1 day work} = \frac{1}{8} \times \frac{1}{2} = \frac{1}{16}$$

A, B, C together can finish the work = 16 days

Q10. $(A+B)$'s 1 day's work = $\frac{1}{12}$

$(B+C)$'s 1 day's work = $\frac{1}{15}$

$(C+A)$'s 1 day's work = $\frac{1}{20}$

$2(A+B+C)$'s 1 day's work = $\left(\frac{1}{12} + \frac{1}{15} + \frac{1}{20}\right)$

= $\frac{(25+20+30)}{300} = \frac{60}{300}$

= $\frac{2}{10} = \frac{1}{5}$

$(A+B+C)$'s 1 day's work = $\frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$

Now A's 1 day work =

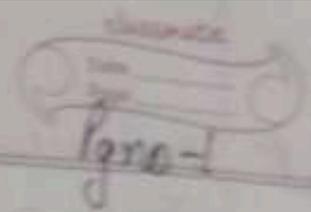
= $(A+B+C)$'s 1 day's work - $(B+C)$'s 1 day's work

= $\frac{1}{10} - \frac{1}{15}$

= $\frac{3-2}{30} = \frac{1}{30}$

Hence A alone can finish the work in 30 days

Ex 7.3



Q1 Distance = 142 km
 hr = 2 hr
 Speed = $\frac{D}{T} = \frac{142 \text{ km/hr}}{2}$
 = 71 km/hr

Q2 Distance =
 speed = 960 km/hr
 Time = 1 hr 50 min
 $1 \text{ hr} + \frac{50}{60} \text{ hr}$
 = $(1 + \frac{50}{60}) \text{ hr} = (\frac{60+50}{60}) \text{ hr} = \frac{110}{60} \text{ hr}$

Distance = Speed x Time
 $960 \text{ km} \times \frac{110}{60}$
 = 160 x 11 km
 = 1760 km

Q3 Speed = 780 km/hr
 Distance = 7150 km
 Time = $\frac{D}{S} = \frac{7150 \text{ km}}{780 \text{ km/hr}}$
 = $\frac{715}{78} \text{ hr}$
 = $9 \frac{13}{78} \text{ hr}$
 = $9 \frac{1}{6} \text{ hr}$
 = $9 \text{ hr} \frac{1}{6} \times 60 \text{ min}$
 = 9 hr 10 min

(In 1 hr = 60 min)

Q4 Distance = 495 km
 Time = 4 hr 30 min
 = $4 \text{ hr} + \frac{30}{60} \text{ hr}$
 = $\left(4 + \frac{1}{2}\right) \text{ hr}$
 = $\frac{9}{2} \text{ hr}$

$\left(1 \text{ min} = \frac{1}{60} \text{ hr}\right)$

Speed = $\frac{D}{T} = \frac{495}{\frac{9}{2}} \text{ km/hr}$
 = $\frac{495 \times 2}{9} \text{ km/hr}$
 = 110 km/hr

Q5 Distance = 950 m
 Time = 5 min = $5 \times 60 = 300 \text{ sec}$

Speed in km/hr = $\frac{\text{m}}{\text{sec}}$ to km/hr
 = $\frac{950}{300} \times \frac{18}{5} = \frac{19}{30} \times \frac{18}{5} \text{ km/hr}$
 = $\frac{19 \times 9}{15} \text{ km/hr}$
 = $\frac{171}{15} \text{ km/hr}$
 = 11.4 km/hr

Q6 Speed = 72 km/hr
 Speed in m/sec = $72 \times \frac{5}{18} = 20 \text{ m/s}$

Q7 Speed = 60 m/sec
 Speed in km/hr = $60 \times \frac{18}{5} = 216 \text{ km/hr}$

Q8 Speed = 10 km/hr

Distance = 750 m

Speed = $10 \times \frac{5}{18}$ m/sec

= $\frac{25}{9}$ m/sec

Time = $\frac{D}{S} = \frac{750}{\frac{25}{9}}$ sec

= $750 \times \frac{9}{25}$

= 270 min

= (270 ÷ 60) sec

60 | 270 (4
240
30

= 4 min 30 sec

Q9 Distance = 500 m

Time = 100 sec

Speed = $\frac{500}{100}$ m/sec

speed in km/hr = $\frac{500}{100} \times \frac{18}{5}$ m/sec

= 18 km/hr ~~18 x 18 km/hr = 324 km/hr~~

Q10 Speed = 20 km/hr

Time = 50 min

= $\frac{50}{60}$ hr

Distance = S x T

= $20 \times \frac{50}{60} = \frac{50}{3} = 16 \frac{2}{3}$ km/hr

Q11 length of train = 576m

Time = 1m 30sec

length of tunnel = ?

Speed of the train = 48 km/hr

let length of the tunnel = x

$$\begin{aligned} \text{Total distance} &= \text{train length} + \text{tunnel length} \\ &= 576 + x \end{aligned}$$

$$\begin{aligned} \text{Speed} &= 48 \text{ km/hr} \\ &= 48 \times \frac{5}{18} \text{ m/sec} = \frac{40}{3} \text{ m/sec} \end{aligned}$$

$$\text{Time} = 1 \text{ min } 30 \text{ sec} = (1 \times 60 + 30) \text{ sec} = 90 \text{ sec}$$

$$\text{Distance} = S \times T$$

$$\begin{aligned} (576 + x) &= \frac{40}{3} \times 90 \Rightarrow 576 + x = 1200 \\ x &= 1200 - 576 \\ x &= 624 \text{ m} \end{aligned}$$

Q12 Train I cover Distance = 150 km
Time = 3 hr

Train II cover Distance = 125 km
Time = 2 hr

Train III cover Distance = 180 km
Time = 3 hr 30 min
 $= \left(3 + \frac{30}{60}\right) \text{ hr}$
 $= \left(3 + \frac{1}{2}\right) \text{ hr} = \frac{7}{2} \text{ hr}$

$$\text{Avg Speed} = \frac{\text{Total Distance}}{\text{Total Time}} = \frac{150 + 125 + 180}{3 + 2 + \frac{7}{2}} \text{ km/hr}$$

$$= \frac{455}{5 + \frac{7}{2}} \text{ km/hr} = \frac{455}{\frac{17}{2}} \text{ km/hr}$$

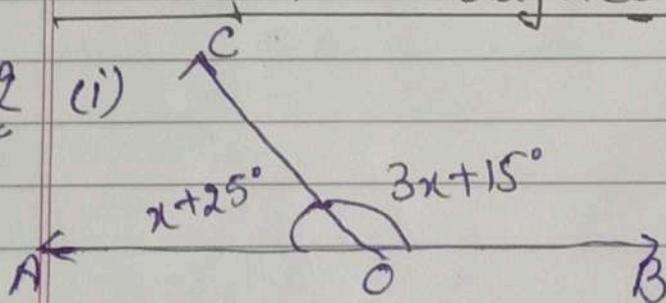
$$= \frac{455 \times 2}{17} \text{ km/hr} = 53.53 \text{ km/hr}$$

19-1

EX 13.2

Q1 (iii) - the common arm is between the two adjacent angles.

Q2



$$\angle AOC + \angle COB = 180^\circ$$

$$x + 25^\circ + 3x + 15^\circ = 180^\circ$$

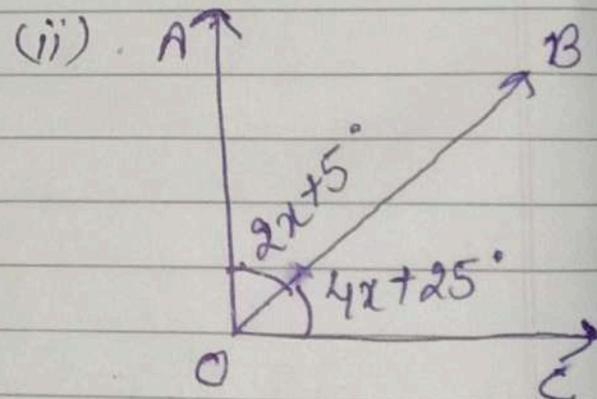
$$4x + 40^\circ = 180^\circ$$

$$4x = 180 - 40$$

$$4x = 140$$

$$x = \frac{140}{4}$$

$$x = 35^\circ$$



$$\angle AOB + \angle BOC = 90^\circ$$

$$2x + 5^\circ + 4x + 25^\circ = 90^\circ$$

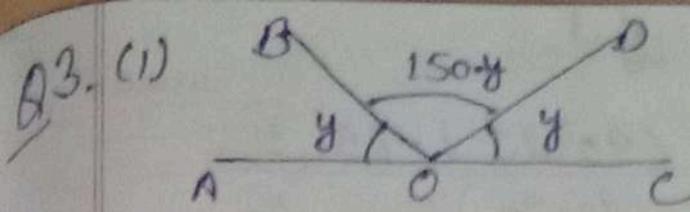
$$6x + 30^\circ = 90^\circ$$

$$6x = 90 - 30$$

$$6x = 60$$

$$x = \frac{60}{6}$$

$$x = 10^\circ$$

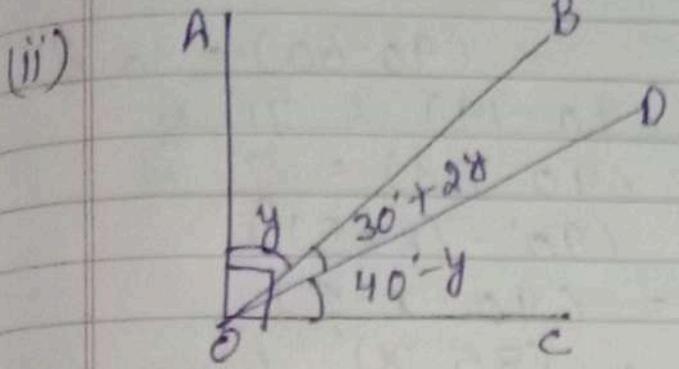


$$\angle AOB + \angle BOD + \angle COD = 180^\circ$$

$$y + 150 - y + y = 180^\circ$$

$$y = 180 - 150$$

$$y = 30^\circ$$



$$\angle AOB + \angle BOD + \angle DOC = 90^\circ$$

$$y + 30 + 2y + 40 - y = 90^\circ$$

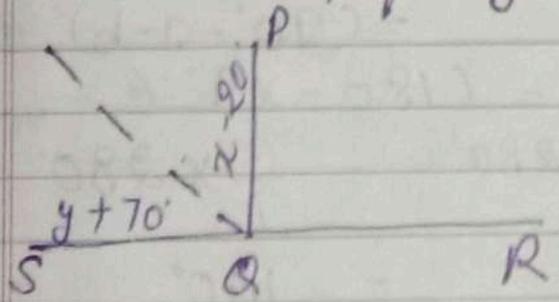
$$70 + 2y = 90^\circ$$

$$2y = 90 - 70$$

$$2y = 20$$

$$y = 10^\circ$$

QA Find $\angle PQR$, if $x = y$



$$\angle PQS + \angle PQR = 180^\circ$$

$$x - 20^\circ + y + 70^\circ + \angle PQR = 180^\circ$$

$$x - 20^\circ + x + 70^\circ + \angle PQR = 180^\circ$$

$$\angle PQR = x - 20^\circ + y + 70^\circ$$

$$90^\circ = x - 20 + x + 70^\circ$$

$$90 + 20 - 70 = 2x$$

Py-Q

$$2x = 110 - 70$$

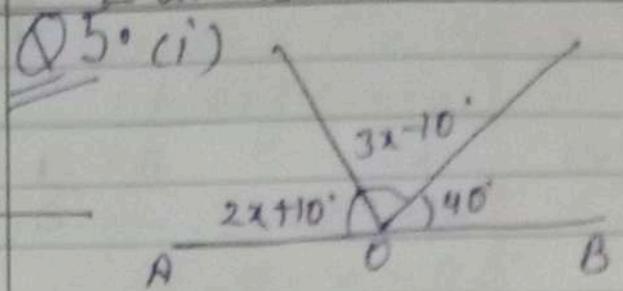
$$2x = 40$$

$$x = 20^\circ$$

So $2x + 50 + \angle PQR = 180^\circ$

$$2 \times 20^\circ + 50 + \angle PQR = 180^\circ$$

$$\angle PQR = 180 - 90 = 90^\circ$$



$$2x + 10^\circ + 3x - 10^\circ + 40^\circ = 180^\circ$$

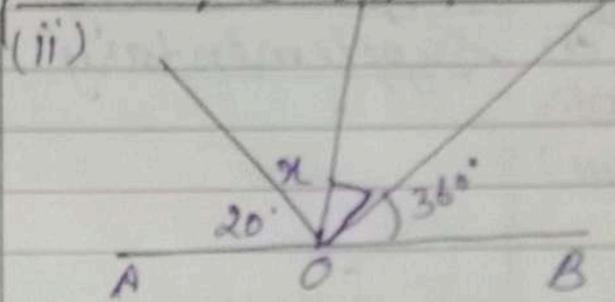
$$5x + 40 = 180^\circ$$

$$5x = 180 - 40^\circ$$

$$5x = 140^\circ$$

$$x = \frac{140}{5} = 28$$

$$x = 28^\circ$$



$$20 + x + 90 + 36 = 180^\circ$$

$$x + 146^\circ = 180^\circ$$

$$x = 180 - 146^\circ$$

$$x = 34^\circ$$

Q6 Complementary angle Pg-3

- classmate
Date _____
Page _____
- (i) Complementary angle of $25^\circ = (90 - 25) = 65^\circ$ A
(ii) " " " $90^\circ = (90 - 90) = 0^\circ$ A
(iii) " " " $a^\circ = (90 - a)$
(iv) " " " $\frac{1}{2}$ of right $\angle = \frac{1}{2} \times 90^\circ = 45^\circ$
 $(90 - 45) = 45^\circ$ A
(v) " " " $\frac{1}{3}$ of $180^\circ = \frac{1}{3} \times 180 = 60^\circ$
 $(90 - 60) = 30^\circ$ A
(vi) " " " $19^\circ = (90 - 19) = 71^\circ$ A
(vii) " " " $63^\circ = (90 - 63) = 27^\circ$ A
(viii) " " " $x + 5^\circ = (90 - (x + 5))$
 $= (90 - x - 5)$
 $= (85 - x)^\circ$ A

Q7 Supplementary angles

- (i) Supplementary angles of $100^\circ = (180 - 100) = 80^\circ$
(ii) " " " $0^\circ = (180 - 0) = 180^\circ$
(iii) " " " $(x + 35)^\circ = (180 - (x + 35))$
 $= (180 - x - 35)$
 $= (145 - x)^\circ$ A
(iv) " " " $(90 + a + b)^\circ = (180 - (90 + a + b))$
 $= (180 - 90 - a - b)$
 $= (90 - a - b)^\circ$ A
(v) " " " $x^\circ = (180 - x)^\circ$ A
(vi) " " " $\frac{3}{7}$ of $280^\circ = \frac{3}{7} \times 280$
 $= 120^\circ$
(vii) " " " of $120^\circ = (180 - 120) = 60^\circ$
" " " $25^\circ = (180 - 25)$
 $= 155^\circ$ A

Q 8 (i) = $20' + 70' = 90$ yes

(ii) = $27^{\circ} 38' + 42^{\circ} 23'$

$$\begin{array}{r} 27^{\circ} 38' \\ + 42^{\circ} 23' \\ \hline 69^{\circ} 61' \quad \text{NO} \\ \underline{71^{\circ} - 60'} \\ 70^{\circ} 01' \end{array}$$

(iii) $54^{\circ} + \frac{2}{5}$ of right \angle

$$54^{\circ} + \frac{2}{5} \times 90^{\circ} 18'$$

$$54^{\circ} + 2 \times 18'$$

$$54^{\circ} + 36'$$

$$= 90^{\circ} \text{ yes}$$

(iv) $(x + 36^{\circ}) + (44 - x)$

$$\cancel{x} + 36 + 44 - \cancel{x}$$

$$80^{\circ} \quad \text{NO}$$

Ex 13.2

$$\begin{array}{r} \text{Q 9 (ii)} \quad 26^{\circ} \quad 58' \quad 35'' \\ + 153^{\circ} \quad 1' \quad 25'' \\ \hline 179^{\circ} \quad 59' \quad 60'' \\ + 1' \quad -60'' \\ \hline 179^{\circ} \quad 60' \quad 00'' \\ + 1' \quad -60' \\ \hline \underline{180^{\circ} \quad 00' \quad 00''} \quad \text{yes} \end{array}$$

(iii) $\frac{3}{10}$ of right \angle + $\frac{4}{5}$ of two right \angle

$$\frac{3}{10} \times 90^\circ + \frac{4}{5} \times (2 \times 90^\circ)$$

$$27^\circ + \frac{4}{5} \times 180^\circ$$

$$27^\circ + 144$$

$$= 171^\circ \quad \text{NO}$$

(iv) $2x + 65^\circ + 115^\circ$

$x + 65^\circ + 115^\circ$

$x + 180^\circ \text{ NO}$

Q 10 let comp $\angle = 90^\circ - x$
let angle = x

A.T.Q

$$(90 - x) - x = 46^\circ$$

$$90^\circ - x - x = 46^\circ$$

$$90 - 2x = 46^\circ$$

$$-2x = 46 - 90^\circ$$

$$+2x = 44$$

$$2x = 44^\circ$$

$$x = \frac{44}{2}$$

$$\boxed{x = 22^\circ} \text{ B}$$

Q 11 $x - 2 + 2x + 5 = 180^\circ$

$$3x + 3 = 180$$

$$3x = 180 - 3$$

$$3x = 177^\circ$$

$$x = \frac{177}{3}$$

$$\text{Ist } \angle = x = 59^\circ$$

$$x - 2 = 59 - 2 = 57^\circ$$

$$\text{IInd } \angle = 2x + 5 = 2 \times 59 + 5 = 123^\circ$$

Q 12 let Ist $\angle = 4x$

IIInd $\angle = 5x$

$$4x + 5x = 90^\circ$$

$$9x = 90$$

$$x = 10^\circ$$

So. Ist $\angle = 4 \times 10$

$$= 40^\circ \text{ B}$$

2nd $\angle = 5 \times 10$

$$= 50^\circ \text{ B}$$

Q13. let $5x + L = 7x$
 $Ind L = 8x$

$7x + 8x = 180$

$15x = 180$

$x = \frac{180}{15}$

$x = 12$

$Ind L = 7x = 7 \times 12 = 84^\circ$
 $Ind L = 8x = 8 \times 12 = 96^\circ$ } Q

Q14

$x + 35 + 2x + 25 = 180$

$3x + 60 = 180$

$3x = 180 - 60$

$3x = 120$

$x = \frac{120}{3}$

$x = 40^\circ$ B

Q17

let angle = x
 Comp. angle = $90 - x$

ATQ

$x - 20 = 90 - x$

$x + x = 90 + 20$

$2x = 110$

$x = \frac{110}{2} = 55^\circ$

$x = 55^\circ$ Q

Q15

Suppl. L of $80^\circ =$

$(180 - 80)$

$= 100^\circ$ B

Q18

let smaller L = x

larger L = $3x - 20$

ATQ

$x + 3x - 20 = 180$

$4x = 180 + 20$

$4x = 200$

$x = \frac{200}{4}$

$x = 50^\circ$ Q

Q16

let angle = x

Comp. angle = $90 - x$

$x = 30 + \frac{90 - x}{2}$

$x = \frac{60 + 90 - x}{2}$

$2x = 60 + 90 - x$

$2x + x = 150$

$3x = 150$

$x = \frac{150}{3}$

$x = 50^\circ$ Q

So smaller L = 50°

larger L =

$3x - 20$

$= 3 \times 50 - 20$

$150 - 20$

$= 130^\circ$ B

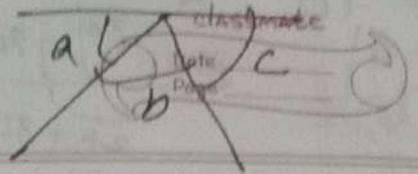
Q19 $5x + 3x + 2x = 180^\circ$ Pg-6 (ii)

$$10x = 180$$

$$x = \frac{180}{10} = 18^\circ$$

$$x = 18^\circ$$

$$\text{Suppl. } \angle \text{ of } 18^\circ = (180^\circ - 18^\circ) = 162^\circ \text{ } \square$$



(a) $b = a + c$, $c = 2a$
 $a + b + c = 180^\circ$
 $a + a + c + 2a = 180^\circ$
 $a + a + 2a + 2a = 180^\circ$
 $6a = 180^\circ$

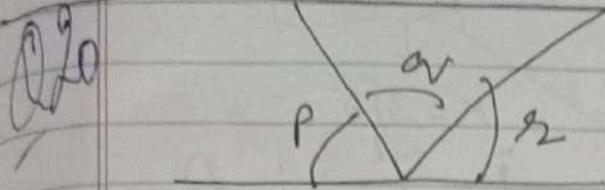
$$a = \frac{180}{6}$$

$$\boxed{a = 30^\circ}$$

$$b = a + c$$

$$c = 2a = 2 \times 30 = 60^\circ$$

$$b = 30^\circ + 60^\circ = 90^\circ \text{ } \square$$



(i) $p = q = r$

$$p + q + r = 180^\circ$$

$$p + p + p = 180^\circ$$

$$3p = 180^\circ$$

$$p = \frac{180}{3} = 60^\circ$$

$$\boxed{p = 60^\circ}$$

$$\text{So, } p = q = r = 60^\circ$$

(ii) $p = 2r$, $q = 3r$

$$p + q + r = 180^\circ$$

$$2r + 3r + r = 180^\circ$$

$$6r = 180^\circ$$

$$r = \frac{180}{6}$$

$$\boxed{r = 30^\circ}$$

$$p = 2r = 2 \times 30 = 60^\circ$$

$$q = 3r = 3 \times 30 = 90^\circ$$

(b) If $b = 2(a + c)$

$$a + b + c = 180^\circ$$

$$a + 2(a + c) + c = 180^\circ$$

$$a + 2a + 2c + c = 180^\circ$$

$$3a + 3c = 180^\circ$$

$$3(a + c) = 180^\circ$$

$$(a + c) = \frac{180}{3}$$

$$a + c = 60^\circ$$

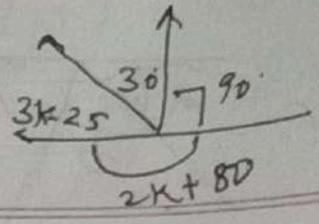
$$\text{So, } b = 2(a + c)$$

$$= 2(60^\circ)$$

$$= 120^\circ$$

$$\boxed{b = 120^\circ}$$

Q21 (i)



$$3k - 25 + 30 + 90 + 2k + 80 = 360$$

$$5k + 200 - 25 = 360$$

$$5k = 360 - 200 + 25$$

$$5k = 160 + 25$$

$$5k = 185$$

$$k = \frac{185}{5}$$

$$k = 37$$

(ii)

$$45 + 3k + 2k + 2k = 360$$

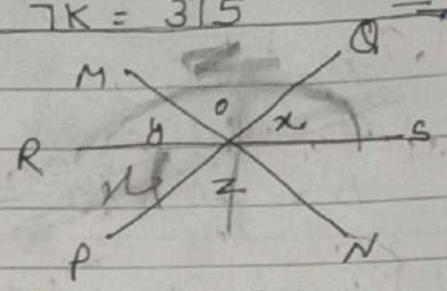
$$7k = 360 - 45$$

$$7k = 315$$

$$k = \frac{315}{7}$$

$$k = 45$$

Q22



$x : y = 1 : 3$
 $z = 120^\circ$
find $\angle ROM$, $\angle POR$
let $x = a$

$$y = 3a$$

$$\angle PON = \angle MOQ \text{ (V.O.A)}$$

$$\angle MOQ = z$$

$$\text{So, } \angle MOQ = z = 120^\circ$$

$$\angle ROM + \angle MOQ + \angle QOS = 180^\circ$$

$$y + z + x = 180^\circ$$

$$3a + 120^\circ + a = 180^\circ$$

$$4a = 180 - 120$$

$$4a = 60$$

$$a = \frac{60}{4}$$

$$a = 15$$

$$x = a = 15^\circ$$

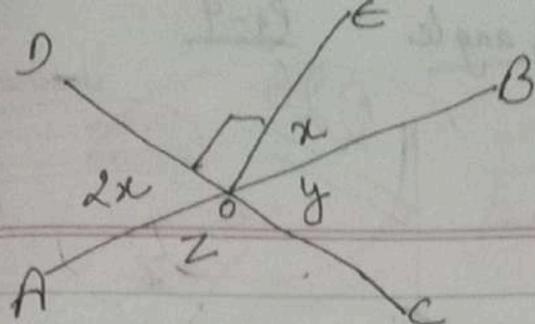
$$y = 3a = 3 \times 15 = 45^\circ$$

So, $\angle ROM = y = 45^\circ$
 $\angle POR = \angle QOS \text{ (V.O.A)}$

$$\angle POR = x$$

$$\angle POR = 15^\circ$$

Q23



In AOB,
 $2x + 90^\circ + x = 180^\circ$
 $3x = 180 - 90$
 $3x = 90$
 $x = 30^\circ$

In DOC,
 $2x + z = 180^\circ$
 $2 \times 30^\circ + z = 180$

19-8

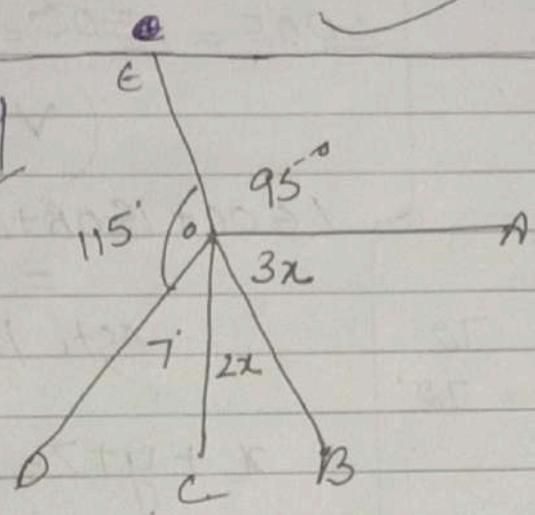
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$60^\circ + z = 180^\circ$
 $z = 180 - 60$
 $z = 120^\circ$

In AOB
 $z + y = 180^\circ$
 $120^\circ + y = 180^\circ$
 $y = 180 - 120$
 $y = 60^\circ$

Q24



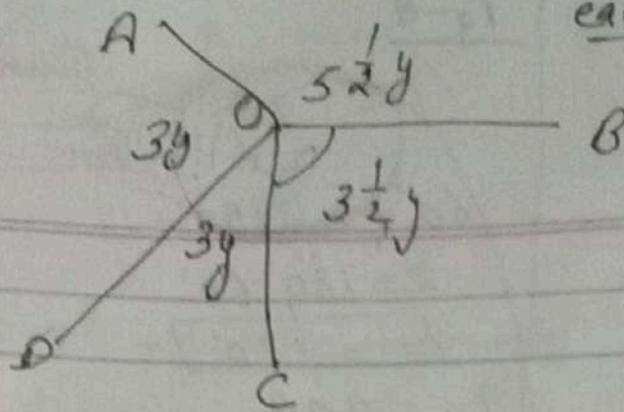
$\angle BOC = 2x$
 $= 2 \times 28.6$
 $\angle BOC = 57.2^\circ$

find $\angle AOD$, $\angle BOC$
 $115^\circ + 7^\circ + 2x + 3x + 95^\circ = 360^\circ$
 $5x = 360^\circ - 95^\circ - 122^\circ$
 $5x = 360^\circ - 217^\circ$
 $5x = 143^\circ$
 $x = \frac{143}{5} = 28.6$

$\angle AOD = 7 + 2x + 3x$
 $= 7 + 5x$
 $= 7 + 5x$
 $= 7 + 5 \times 28.6$
 $= 7 + 143.0$

$\angle AOD = 150^\circ$

Q25



each angle

$$3y + 3y + 5\frac{1}{2}y + 3\frac{1}{2}y = 360^\circ$$

$$6y + \frac{11}{2}y + \frac{7}{2}y = 360^\circ$$

$$\frac{12y + 11y + 7y}{2} = 360^\circ$$

$$\frac{30}{2}y = 360^\circ$$

$$y = \frac{360^\circ \times 2}{30}$$

$$y = 24^\circ$$

So, $\angle AOD = 3y = 3 \times 24 = 72^\circ$

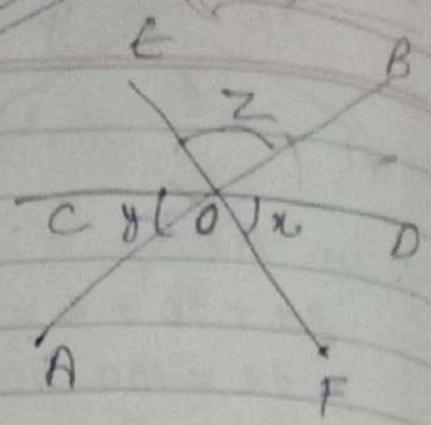
$\angle DOC = 3y = 3 \times 24 = 72^\circ$

$\angle COB = 3\frac{1}{2}y = \frac{7}{2}y$
 $= \frac{7}{2} \times 24 = 84^\circ$

$\angle BOA = 5\frac{1}{2}y = \frac{11}{2}y$
 $= \frac{11}{2} \times 24$

$= 132^\circ$

Q26



find $x+y+z$

$\angle EOB = \angle AOF = z$
 $\angle COA = \angle BOD = y$
 $\angle DOF = \angle EOC = x$

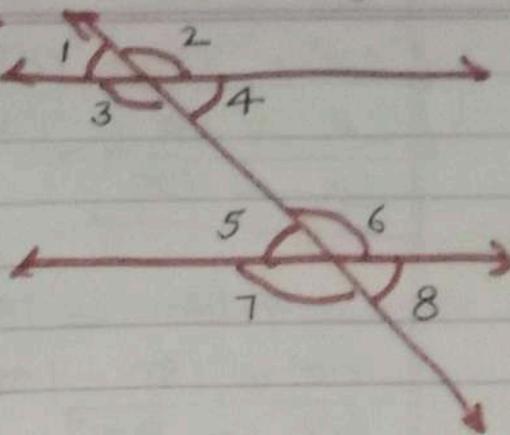
(V.O.A)

$\angle EOC + \angle EOB + \angle BOD = 180^\circ$
 (Str. line)

$x + y + z = 180^\circ$

Ex 13.3

- 1) (i) $\angle 3$ and $\angle 6$ = Interior Alternate \angle
 (ii) $\angle 1$ and $\angle 8$ = Alt. Ext. \angle
 (iii) $\angle 2$ and $\angle 4$ = Adjacent \angle
 (iv) $\angle 1$ and $\angle 5$ = Corresponding \angle
 (v) $\angle 3$ and $\angle 7$ = Corr. \angle
 (vi) $\angle 1$ and $\angle 4$ = V.O.A
 (vii) $\angle 2$ and $\angle 7$ = Ext. Alt. \angle
 (viii) $\angle 5$ and $\angle 7$ = Adjacent \angle
 (ix) $\angle 4$ and $\angle 6$ = Co-interior \angle
 (x) $\angle 7$ and $\angle 8$ = Adjacent \angle



- 2) (i) $\angle 1$ and $\angle 4$ = VOA

- (ii) $\angle 7$ and $\angle 9$ = VOA

- (iii) $\angle 4$ and $\angle 7$ = Alt. Int. \angle

- (iv) $\angle 4$ and $\angle 5$ = Adjacent \angle

- (v) $\angle 10$ and $\angle 12$ = VOA

- (vi) $\angle 4$ and $\angle 6$ = Co-Int. \angle

- (vii) $\angle 7$ and $\angle 13$ = Corresponding angles

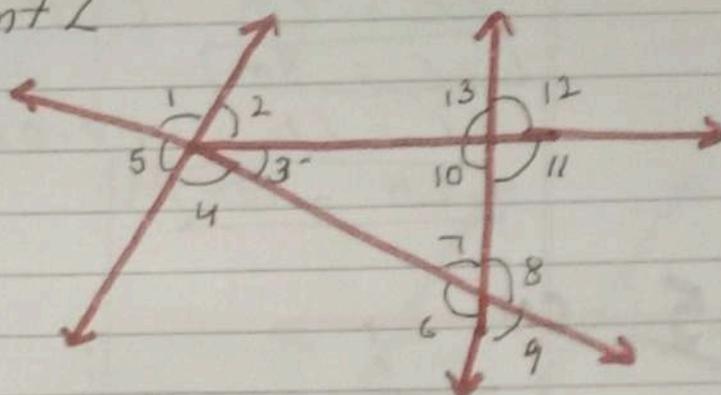
- (viii) $\angle 6$ and $\angle 7$ = Adjacent angles

- (ix) $\angle 6$ and $\angle 8$ = VOA

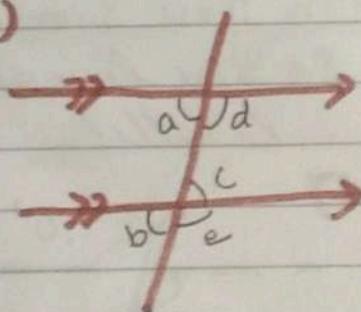
- (x) $\angle 2$ and $\angle 13$ = Co-interior \angle

- (xi) $\angle 11$ and $\angle 8$ = Co-interior \angle

- (xii) $\angle 8$ and $\angle 9$ = Adjacent \angle



3) (a)



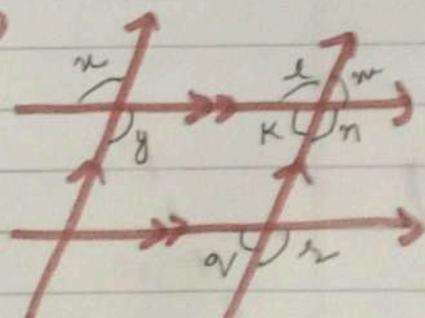
$\angle a = \angle c$ (Alt. Int \angle)

$\angle c = \angle b$ (V.O.A)

$\angle d = \angle e$ (Corr. \angle)

$\angle a = \angle b$ (Corr. \angle)

(b)



(i) $\angle x = \angle p$, $\angle y = \angle q$

$\angle k = \angle r$, $\angle n = \angle s$ (Corr. \angle)

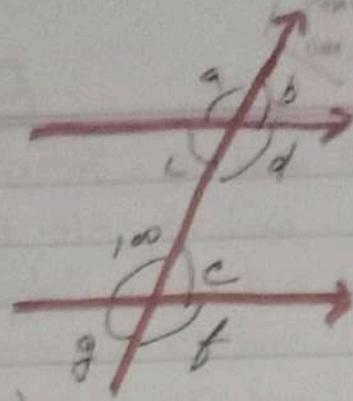
(ii) $\angle x = \angle y$, $\angle k = \angle n$, $\angle p = \angle q$
(V.O.A)

(iii) $\angle y = \angle k$ (Alt. Int \angle)

(iv) $\angle k = \angle r$, $\angle q = \angle s$, $\angle x = \angle n$ (Ext. Alt \angle)

4

$\angle f = 100^\circ$	(V.O.A)
$\angle d = 100^\circ$	(Alt. Int. L)
$\angle a = \angle d$	(V.O.A)
$\angle a = 100^\circ$	



Page No. Pg-2

$\angle e + 100 = 180^\circ$ (St. line)

$\angle e = 180 - 100^\circ$

$\angle e = 80^\circ$

$\angle e = \angle g$ (V.O.A)

$\angle g = 80^\circ$

$\angle c = \angle e$ (Alt. Int. L)

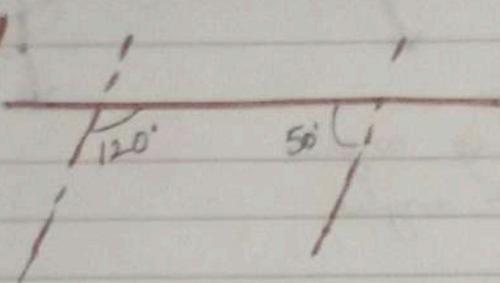
$\angle c = 80^\circ$

$\angle c = \angle b$ (V.O.A)

$\angle b = 80^\circ$

5

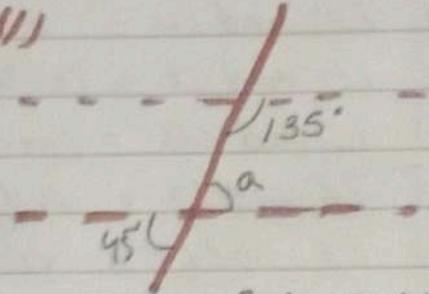
(ii)



$120 + 50 = 170^\circ$

not 180° so these lines are not parallel

(iii)



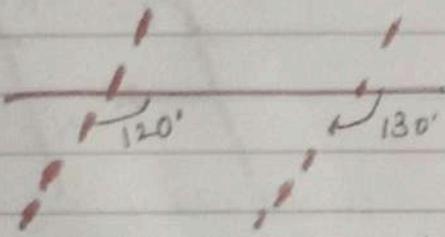
$\angle a = 45^\circ$ (V.O.A)

$\angle a + 135^\circ$ (Alt. Int. L)

$45 + 135 = 180^\circ$

\therefore their sum is 180° so these lines are parallel.

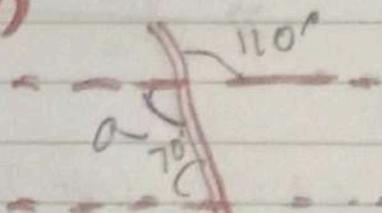
(iii)



$120 = 130$ (Corr. L)

these are not parallel lines

(iv)



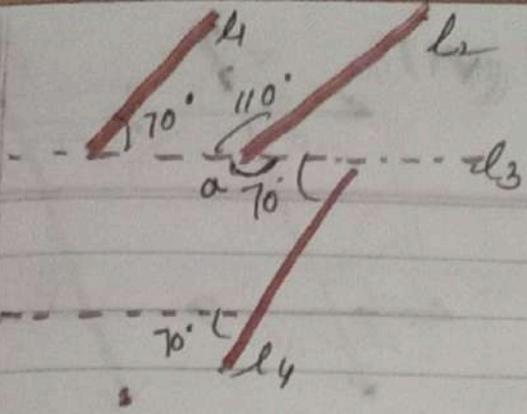
$\angle a = 110^\circ$ (V.O.A)

$\angle a + 70^\circ$ (Corr. Int. L)

$110 + 70 = 180^\circ$

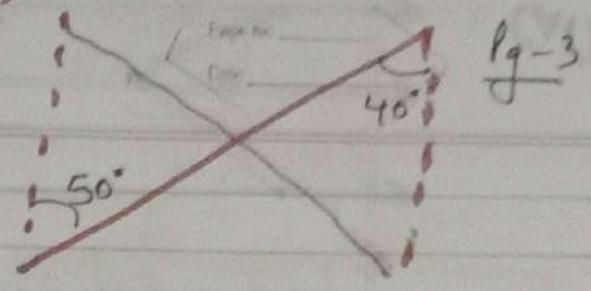
these lines are parallel

(v)



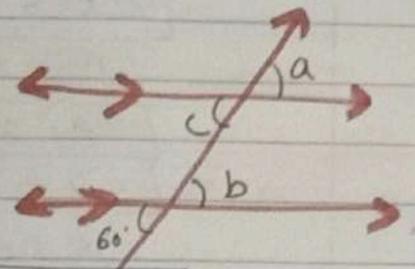
$70^\circ + 110^\circ = 180^\circ$ (Alt. Int. \angle)
 $l_1 \parallel l_2$
 $70^\circ = 70^\circ$ (Corr. \angle)
 $l_3 \parallel l_4$
 $\angle a = 110^\circ$ (V.O.A)
 $110^\circ + 70^\circ = 180^\circ$
 $l_2 \parallel l_4$

(vi)



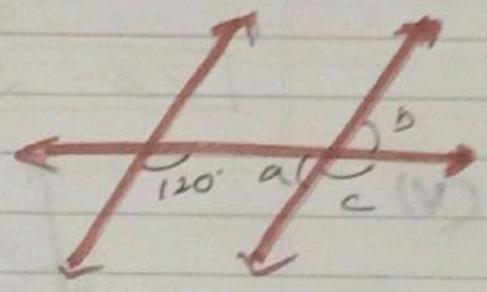
there are not parallel lines

Q6 (i)



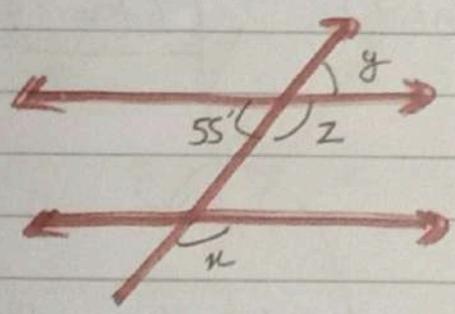
$\angle b = 60^\circ$ (V.O.A)
 $\angle b = \angle c$ (Alt. Int. \angle)
 $\angle c = 60^\circ$
 $\angle c = \angle a$ (V.O.A)
 $\angle a = 60^\circ$

(ii)



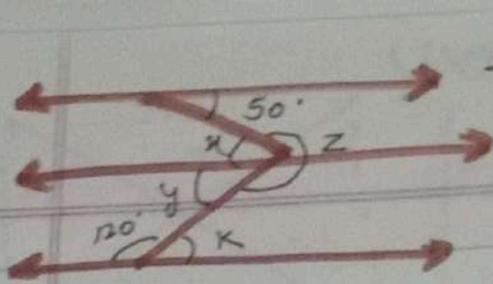
$\angle a + 120^\circ = 180^\circ$
 (Co-Int. \angle)
 $\angle a = 60^\circ$
 $\angle a = \angle b$ (V.O.A)
 $\angle b = 60^\circ$
 $\angle c = 120^\circ$
 (Corr. \angle)

(iii)



$\angle y = 55^\circ$ (V.O.A)
 $55^\circ + \angle z = 180^\circ$ (St. line \angle)
 $\angle z = 180^\circ - 55^\circ$
 $\angle z = 125^\circ$
 $\angle z = \angle x$ (Corr. \angle)
 $\angle x = 125^\circ$

(iv)



$$\boxed{\angle x = 50^\circ} \text{ (Alt. } \angle)$$

$$\angle k + 120^\circ = 180^\circ \text{ (St. line } \angle)$$

$$\angle k = 180 - 120$$

$$\boxed{\angle k = 60^\circ}$$

$$\angle y = \angle k \text{ (Alt. Int. } \angle)$$

$$\boxed{\angle y = 60^\circ}$$

$$\angle x + \angle y + \angle z = 360^\circ$$

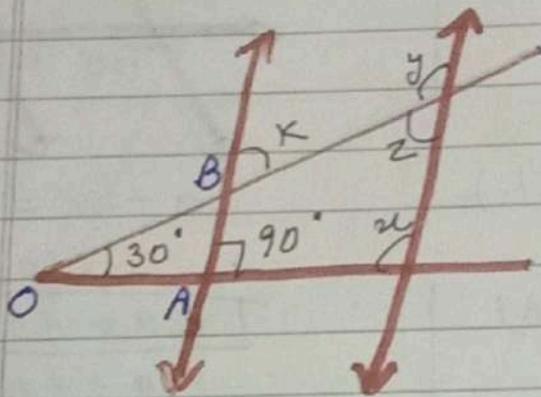
(complete \angle)

$$50^\circ + 60^\circ + \angle z = 360^\circ$$

$$\angle z = 360^\circ - 110^\circ$$

$$\boxed{\angle z = 250^\circ}$$

(v)



$$90^\circ + x = 180^\circ \text{ (Alt. Int. } \angle)$$

$$\angle x = 180^\circ - 90^\circ$$

$$\boxed{\angle x = 90^\circ}$$

In ΔOAB

$$\angle O + \angle A + \angle B = 180^\circ$$

$$30 + 90^\circ + \angle B = 180^\circ$$

$$\angle B = 180 - 120^\circ$$

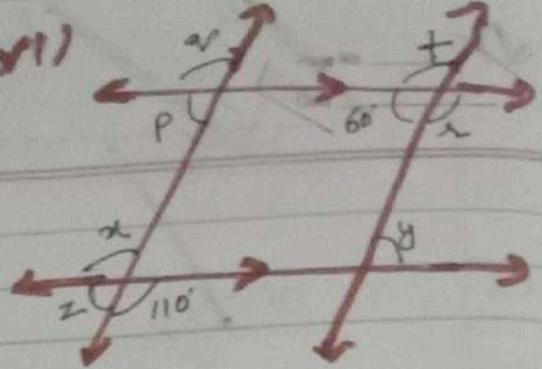
$$\angle B = 60^\circ$$

$$\angle B = \angle k \text{ (v.o.A)}$$

$$\boxed{\angle k = 60^\circ}$$

$$\angle k = \angle z \text{ (Alt. Int. } \angle)$$

$$\boxed{\angle z = 60^\circ}$$



$$\boxed{\angle x = 110^\circ} \text{ (v.o.A)}$$

$$\angle x + \angle z = 180^\circ$$

(St. line \angle)

$$110^\circ + \angle z = 180$$

$$\angle z = 180^\circ - 110^\circ$$

$$\boxed{\angle z = 70^\circ}$$

$$\angle p = \angle z \text{ (corr } \angle)$$

$$\boxed{\angle p = 70^\circ}$$

$$\angle q = \angle x \text{ (corr } \angle)$$

$$\boxed{\angle q = 110^\circ}$$

$$\angle y = 60^\circ \text{ (Alt. Int. } \angle)$$

$$\angle r + 60^\circ = 180^\circ$$

(St. line \angle)

$$\angle r = 180^\circ - 60^\circ$$

$$\boxed{\angle r = 120^\circ}$$

$$\angle r = \angle t$$

(v.o.A)

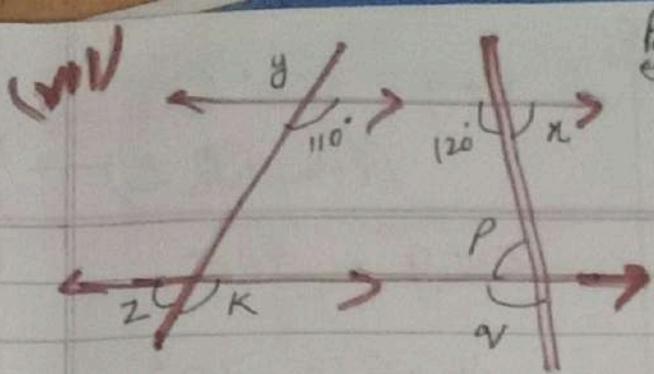
$$\boxed{\angle t = 120^\circ}$$

$$\angle z + \angle y = 180^\circ$$

$$60^\circ + \angle y = 180^\circ$$

$$\angle y = 180 - 60^\circ$$

$$\boxed{\angle y = 120^\circ}$$



$$\boxed{\angle y = 110^\circ} \text{ (v.o.A)}$$

$$\boxed{\angle K = 110^\circ} \text{ (corr. L)}$$

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

(st. line L)

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

$$\boxed{\angle x = 60^\circ}$$

$$\angle x = \angle P \text{ (Alt. Int. L)}$$

$$\boxed{\angle P = 60^\circ}$$

$$\boxed{\angle q = 120^\circ} \text{ (corr. L)}$$

$$\text{---} = \text{---} \text{ (---)}$$

$$\text{---} = \text{---}$$

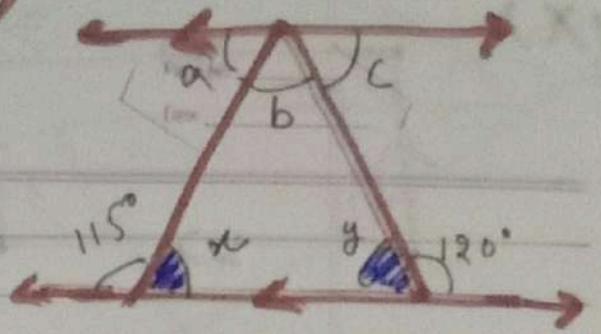
$$\angle z + \angle K = 180^\circ \text{ (st. line L)}$$

$$\angle z + 110^\circ = 180^\circ$$

$$\angle z = 180^\circ - 110^\circ$$

$$\boxed{\angle z = 70^\circ}$$

pg-5 (ix)



$$\angle x + 115^\circ = 180^\circ \text{ (st. line L)}$$

$$\angle x = 180^\circ - 115^\circ$$

$$\angle x = 65^\circ$$

$$\angle a = \angle x \text{ (Alt. Int. L)}$$

$$\boxed{\angle a = 65^\circ}$$

$$\angle y + 120^\circ = 180^\circ \text{ (st. line L)}$$

$$\angle y = 180^\circ - 120^\circ$$

$$\angle y = 60^\circ$$

$$\angle c = \angle y \text{ (Alt. Int. L)}$$

$$\boxed{\angle c = 60^\circ}$$

$$\angle a + \angle b + \angle c = 180^\circ$$

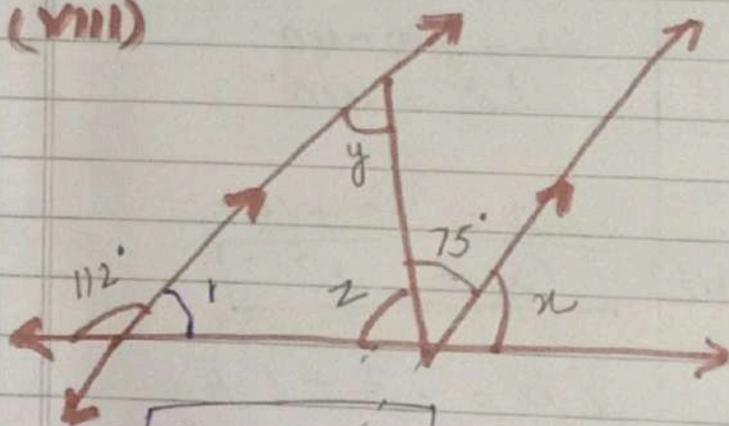
(st. line L)

$$65^\circ + \angle b + 60^\circ = 180^\circ$$

$$\angle b = 180^\circ - 125^\circ$$

$$\boxed{\angle b = 55^\circ}$$

(viii)



$$\boxed{\angle y = 75^\circ} \text{ (Alt. Int. L)}$$

$$\angle 1 + 112^\circ = 180^\circ \text{ (st. line L)}$$

$$\angle 1 = 180^\circ - 112^\circ = 68^\circ$$

$$\angle x = \angle 1 \text{ (corr. L)}$$

$$\boxed{\angle x = 68^\circ}$$

$$\angle z + 75^\circ + \angle x = 180^\circ$$

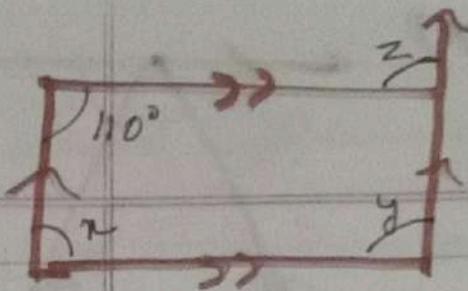
(st. line L)

$$\angle z + 75^\circ + 68^\circ = 180^\circ$$

$$\angle z = 180^\circ - 143^\circ$$

$$\boxed{\angle z = 37^\circ}$$

(X)

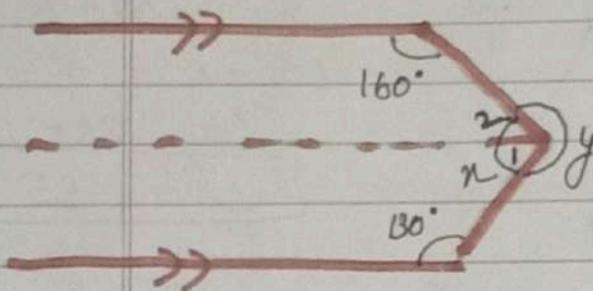


$$\begin{aligned} \angle x + 110^\circ &= 180^\circ \text{ (Co-Int. L)} \\ \angle x &= 180^\circ - 110^\circ \\ \boxed{\angle x = 70^\circ} \end{aligned}$$

$$\begin{aligned} \angle x + \angle y &= 180^\circ \text{ (Co-Int. L)} \\ 70^\circ + \angle y &= 180^\circ \\ \angle y &= 180^\circ - 70^\circ \\ \boxed{\angle y = 110^\circ} \end{aligned}$$

$$\begin{aligned} \angle z &= \angle y \text{ (corr L)} \\ \boxed{\angle z = 110^\circ} \end{aligned}$$

(XI)



$$\text{let } \angle x = \angle 1 + \angle 2$$

$$\begin{aligned} \angle 1 + 130^\circ &= 180^\circ \text{ (Co-Int. L)} \\ \angle 1 &= 180 - 130^\circ \\ \angle 1 &= 50^\circ \end{aligned}$$

$$\begin{aligned} \angle 2 + 160^\circ &= 180^\circ \text{ (Co-Int. L)} \\ \angle 2 &= 180 - 160^\circ \\ \angle 2 &= 20^\circ \end{aligned}$$

$$\text{So, } \angle x = \angle 1 + \angle 2 = 50^\circ + 20^\circ$$

$$\boxed{\angle x = 70^\circ}$$

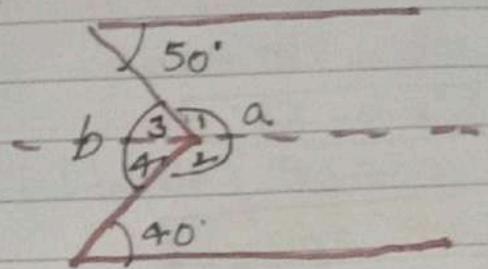
Pg-6

$$\begin{aligned} x + y &= 360^\circ \\ \text{(complete L)} \end{aligned}$$

$$70 + y = 360^\circ$$

$$\begin{aligned} y &= 360 - 70^\circ \\ \boxed{y = 290^\circ} \end{aligned}$$

(XIII)



$$\begin{aligned} \text{let } \angle a &= \angle 1 + \angle 2 \\ \angle 1 + 50^\circ &= 180^\circ \\ \text{(Co-Int. L)} \end{aligned}$$

$$\begin{aligned} \angle 1 &= 180 - 50^\circ \\ \angle 1 &= 130^\circ \end{aligned}$$

$$\begin{aligned} \angle 2 + 40^\circ &= 180^\circ \\ \text{(Co-Int. L)} \end{aligned}$$

$$\begin{aligned} \angle 2 &= 180 - 40^\circ \\ \angle 2 &= 140^\circ \end{aligned}$$

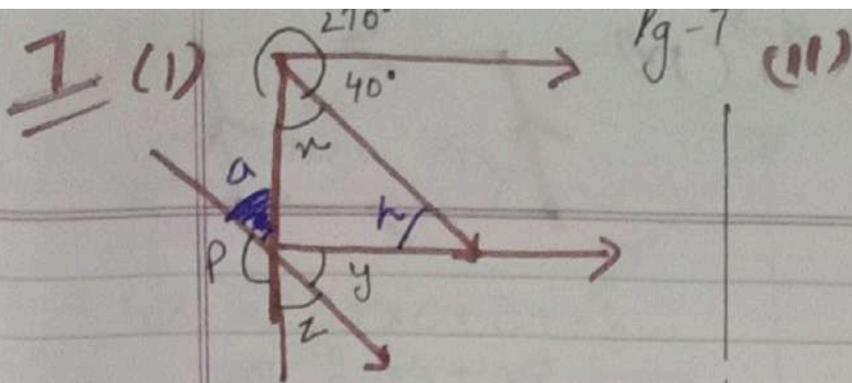
$$\begin{aligned} \angle a &= 130^\circ + 140^\circ \\ \boxed{\angle a = 270^\circ} \end{aligned}$$

$$\angle b = \angle 3 + \angle 4$$

$$\begin{aligned} \angle 3 &= 50^\circ \text{ (Alt. Int)} \\ \angle 4 &= 40^\circ \text{ (L)} \end{aligned}$$

$$\angle b = 50^\circ + 40^\circ$$

$$\boxed{\angle b = 90^\circ}$$



find x, y, P

$$x + 40^\circ + 270^\circ = 360^\circ$$

(complete \angle)

$$x = 360^\circ - 310$$

$$\boxed{x = 50^\circ}$$

$$\angle x = \angle a \text{ (Alt. Int. } \angle)$$

$$\angle a = 50^\circ$$

$$\angle a = \angle z \text{ (v.o.A)}$$

$$\boxed{\angle z = 50^\circ}$$

$$\angle z + \angle P = 180^\circ$$

(st. line L)

$$50^\circ + \angle P = 180^\circ$$

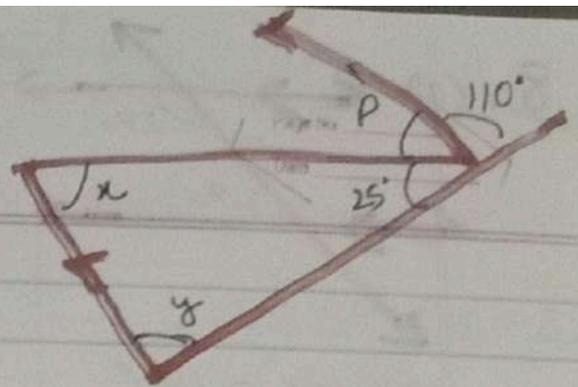
$$\angle P = 180 - 50^\circ$$

$$\boxed{\angle P = 130^\circ}$$

$$\angle h = 40^\circ \text{ (Alt. Int. } \angle)$$

$$\angle y = \angle h \text{ (Alt. Int. } \angle)$$

$$\boxed{\angle y = 40^\circ}$$



~~LP + 25 + 110 = 180~~

$$\angle P = 180 - 135$$

$$\angle P = 45^\circ$$

$$LP + 25^\circ + 110^\circ = 180^\circ$$

(st. line L)

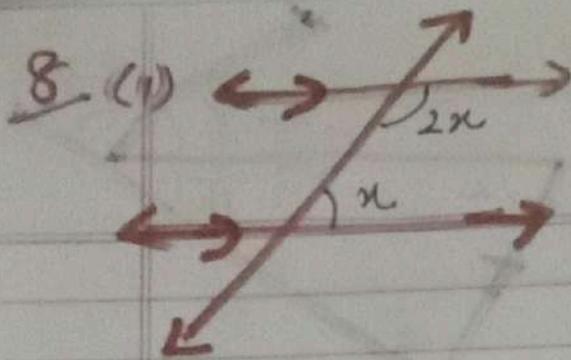
$$LP = 180^\circ - 135^\circ$$

$$\boxed{LP = 45^\circ}$$

$$\angle x = \angle P \text{ (Alt. Int. } \angle)$$

$$\boxed{\angle x = 45^\circ}$$

$$\boxed{\angle y = 110^\circ} \text{ (corr } \angle)$$

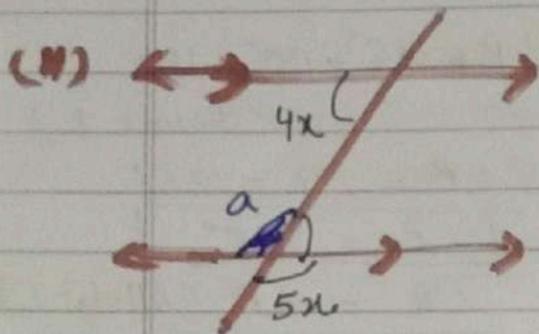


$$2x + x = 180^\circ$$

(Co-Int. L)

$$3x = 180^\circ$$

$$\boxed{x = 60^\circ}$$



$$\angle a = 5x \text{ (v.o.A)}$$

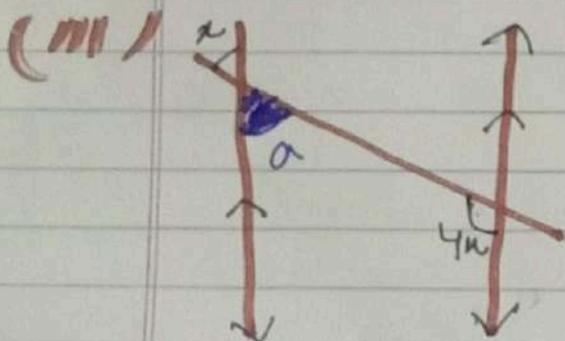
$$\angle a + 4x = 180^\circ$$

(Co-Int. L)

$$5x + 4x = 180^\circ$$

$$9x = 180^\circ$$

$$\boxed{x = 20}$$



$$\angle x = \angle a \text{ (v.o.A)}$$

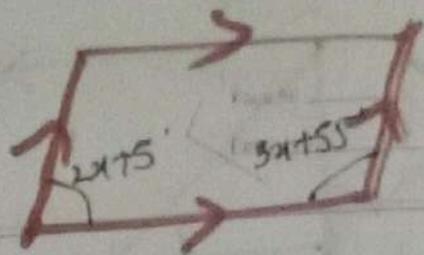
$$\angle a + 4x = 180^\circ$$

$$\angle x + 4x = 180^\circ$$

$$5x = 180^\circ$$

$$\boxed{x = 36^\circ}$$

Q-8 (iv)



$$2x + 5 + 3x + 55 = 180^\circ$$

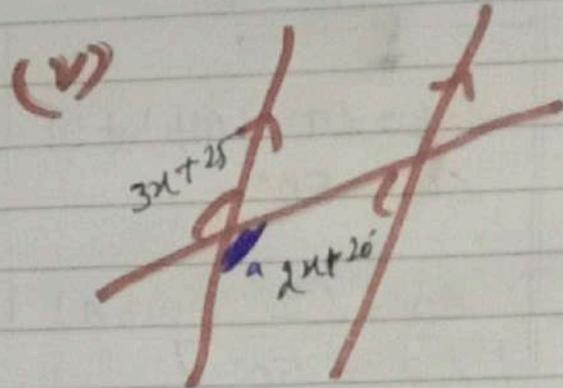
$$5x + 60 = 180^\circ$$

(Co-Int. L)

$$5x = 180 - 60$$

$$5x = 120$$

$$\boxed{x = 24^\circ}$$



$$\angle a = 3x + 25^\circ \text{ (v.o.A)}$$

$$\angle a + 2x + 20 = 180^\circ$$

(Co-Int. L)

$$3x + 25 + 2x + 20 = 180$$

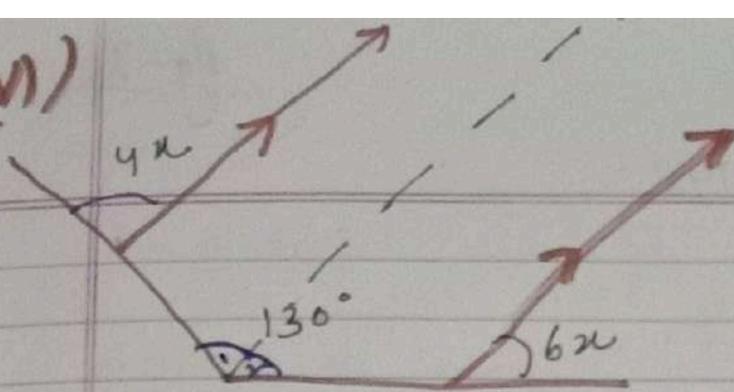
$$5x + 45 = 180$$

$$5x = 180 - 45$$

$$5x = 135$$

$$\boxed{x = 27^\circ}$$

(vi)



$$L1 = 4x \text{ (corr. L)}$$

$$L2 = 6x \text{ (corr. L)}$$

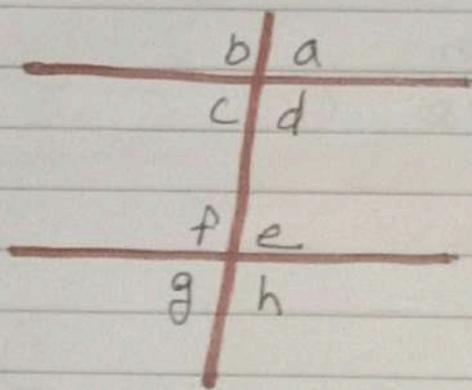
$$L1 + L2 = 130^\circ$$

$$4x + 6x = 130^\circ$$

$$10x = 130^\circ$$

$$x = 13^\circ$$

9



Given $a:b = 1:2$

$$\text{let } \angle a = x$$

$$\angle b = 2x$$

$$\angle a + \angle b = 180^\circ \text{ (St. line L)}$$

$$x + 2x = 180^\circ$$

$$3x = 180^\circ$$

$$x = 60^\circ$$

$$\text{So } \angle a = x = 60^\circ$$

$$\angle b = 2x = 2 \times 60^\circ = 120^\circ$$

$$\angle a = \angle c \text{ (v.o.A)}$$

$$\angle c = 60^\circ$$

$$\angle c = \angle e \text{ (Alt. Int. L)}$$

$$\angle e = 60^\circ$$

$$\angle e = \angle g \text{ (v.o.A)}$$

$$\angle g = 60^\circ$$

$$\angle b = \angle d \text{ (v.o.A)}$$

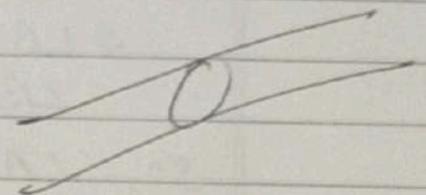
$$\angle d = 120^\circ$$

$$\angle d = \angle f \text{ (Alt. Int. L)}$$

$$\angle f = 120^\circ$$

$$\angle f = \angle h \text{ (v.o.A)}$$

$$\angle h = 120^\circ$$



Ist TERM SYLLABUS
CLASS - 7th PUNJABI

ਪਾਠ - 3 ਪੜ੍ਹੇ ਵਿਖੇ ਦੀ ਪਛਾਣ

ਪਾਠ - 9 ਸਮੇਂ

ਪਾਠ - 11 ਫੁੱਲਾਂ ਦਾ ਰੰਗ

ਵਿਸ਼ਾਕਰਮ

ਪਾਠ - 8 ਵਿਗੇ

ਪਾਠ - 11 ਵਿੱਖੀ ਸੁੱਖਰ

ਮੁਹਾਈ - ਏ, ਮ, ਹ

ਵੇਖ -

1. ਗੰਗੇ ਸਰਪੰਚ ਪੁਸਤਕ

2. ਪੰਚ ਮਾਗਨਤ

ਕਹਾਣੀ (ਨਿੱਖਿਆ) ਵਿਸ਼ਾ ਅਤੇ ਚਾਰ ਪੱਤੇ

ਵਿਸ਼ਾ/ਪੱਤੇ

1. ਸੁਰਮਾਤਾ ਮੁਕਾਈ ਕਈ ਮਾਰੀ

2. ਸਿੱਤ ਮਰੀ ਤੇ ਪਾਸ ਹੋਣ ਤੇ ਵਧਾਈ ਪੱਤੇ

Ch-3 ਪੜ੍ਹੇ - ਲਿਖੇ ਦੀ ਪਛਾਣ

(I) Short Q/Ans.

(ੳ) ਗਰਮੀਆਂ ਵੇਲੇ ਮੈਂਡਰਨ ਸਕੂਲ ਦੇ ਕੀ ਕਾਰਨ ?
ਉੱਤਰ - ਗਰਮੀਆਂ ਵੇਲੇ ਮੈਂਡਰਨ ਸਕੂਲ ਦੇ ਸੁੱਖ - ਸੁਵਿਧਾਮਾਪਕਾਰੀ ਕਾਰਨ।

(ਅ) ਮਰੇਹਲੇ ਤੇ ਪੜ੍ਹੇ - ਲਿਖੇ ਹੋਏ ਢਾਂਚੇ ਦੀ ਵਰਤੋਂ ਕਿਉਂ ?
ਉੱਤਰ - ਮਰੇਹਲੇ ਤੇ ਪੜ੍ਹੇ - ਲਿਖੇ ਹੋਏ ਢਾਂਚੇ ਵਿੱਚ ਕਿਸੇ ਵੀ ਆਮ ਸ਼ਿਕਾਇਤ ਦਾ ਇਲਾਜ ਹੋ ਸਕਦਾ ਹੈ।

(ੲ) ਮੈਂਡਰਨ ਦੀ ਮਨੁੱਖੀਆਂ ਦੀਆਂ ਦੋ ਪੜ੍ਹੇ - ਲਿਖੇ ਹੋਏ ਦੋ ਵਿਸ਼ੇਸ਼ ਗੱਲਾਂ ਤੇ ਪੜ੍ਹੇ ਵੱਗੇਰਾ ਹੈ ?
ਉੱਤਰ - ਮੈਂਡਰਨ ਦੀ ਮਨੁੱਖੀਆਂ ਦੀਆਂ ਦੋ ਪੜ੍ਹੇ - ਲਿਖੇ ਹੋਏ ਦੋ ਵਿਸ਼ੇਸ਼ ਗੱਲਾਂ ਤੇ ਪੜ੍ਹੇ ਵੱਗੇਰਾ ਹੈ।

(ੳ) ਮੈਂਡਰਨ ਦੀ ਮਨੁੱਖੀਆਂ ਮਾਰਧਰਮ ਤੇ ਮਗਰਮਗਰ ਰੋਕਣੀ ਸਿੱਖਿਆ ਵਿੱਚ ਗਿਆਨ ਤੇ ਕੌਰ ਕਾਰਨ ?
ਉੱਤਰ - ਮੈਂਡਰਨ ਦੀ ਮਨੁੱਖੀਆਂ ਮਾਰਧਰਮ ਤੇ ਮਗਰਮਗਰ ਰੋਕਣੀ ਸਿੱਖਿਆ ਵਿੱਚ ਗਿਆਨ ਤੇ ਕੌਰ ਕਾਰਨ।

(ੴ) ਹਰੀ ਮੋਹਨ ਨੇ ਮੈਂਡਰਨ ਦੀ ਕੀ ਵਿਚਾਰ ਸਥਾਪਨਾ ਪ੍ਰਣਾਲੀ ?
ਉੱਤਰ - ਹਰੀ ਮੋਹਨ ਨੇ ਮੈਂਡਰਨ ਦੀ ਕੀ ਵਿਚਾਰ ਸਥਾਪਨਾ ਪ੍ਰਣਾਲੀ ਵਿੱਚ "ਸਾਡੇ ਵਿਚਾਰ ਤੇ ਸਾਡੇ ਪੜ੍ਹੇ ਲਿਖੇ ਹੋਏ ਦੋ ਵਿਸ਼ੇਸ਼ ਗੱਲਾਂ ਤੇ ਪੜ੍ਹੇ ਵੱਗੇਰਾ ਹੈ।"

Long @/Ans.

ਉੱਤਰ (ੳ) ਬੰਦਿਆਂ ਨੇ ਪੜ੍ਹੇ - ਵਿੱਚ ਹੁੰਦੇ ਘਾਂਠੇ ਕੀ-ਕੀ ਦੱਸਿਆ ?
ਉੱਤਰ - ਬੰਦਿਆਂ ਨੇ ਪੜ੍ਹੇ - ਵਿੱਚ ਹੁੰਦੇ ਘਾਂਠੇ ਦੱਸਿਆ ਕਿ ਸਮੀ ਮਾਪਣ ਵੇਲੇ ਮਾਪਣ ਨਹੀਂ ਠੀਕ ਦਿਖਾ ਦੇਵੇਗਾ, ਸਮੀ ਮਾਪਣ ਵੇਲੇ ਦਾ ਘਾਂਠੇ ਮਾਪਣ ਸਭੇ ਦੀ ਤਬਤੀ ਤਾਂ ਕਰੇਗੇ ਅਤੇ ਸਮੀ ਮਾਪਣੀ ਜਾਣ - ਪਛਾਣ ਜਾਣ - ਪਛਾਣ ਕਰਾਉਣ ਵੇਲੇ ਵੇਖ ਲਿਆ ਕਰੇਗੇ ਕਿ ਕਿੰਨੇ ਪੜ੍ਹੇ ਤਾਂ ਸਮੇਂ ਵਿੱਚ ਪੜ੍ਹੇ ਤਾਂ, ਜਾਣ ਪਾਰ ਵੀ ਕਰੇਗੇ ਤੇ ਦੱਸੇਗੇ ਕਿ ਸਮੀ ਕੀਰੀਆਂ ਜਗਤਾਂ ਪਾਠ ਕੀਰੀਆਂ ਹੋਈਆਂ ਹਨ।

(ਅ) ਬੰਦਿਆਂ ਨੇ ਪੜ੍ਹੇ ਵਿੱਚ ਵੀਏ ਇੱਕ ਕਿਹੜਾ-ਕਿਹੜਾ ਘਾਂਠੇ ਦੱਸਿਆ ?
ਉੱਤਰ - ਬੰਦਿਆਂ ਨੇ ਪੜ੍ਹੇ ਵਿੱਚ ਵੀਏ ਦਾ ਗੁਣ ਘਾਂਠੇ ਦੱਸਿਆ ਕਿ ਉਹ ਸਿਰਤੀ ਹੋਏ ਹੋ, ਸਠਾਈ ਦਾ ਵਿਆਜ ਹੋਖਦਾ ਹੋ, ਉਸਦਾ ਸਮੇਂ ਗਿਆਰ ਵੇਰੇ ਹੋਏ ਹੋ, ਉਹ ਸਮੇਂ ਤੇ ਸਮੇਂ ਗਿਆਰ ਗਯਾ ਕਰਦਾ ਹੋ, ਉਹ ਵਿਸੇ ਤਾਂ ਵਿਸੇ ਕੰਮ ਦਾ ਮਾਠ ਹੋਏ ਹੋ, ਉਹ ਸਿਰਤੀ ਹੋਏ ਹੋ ਅਤੇ ਸਮੇਂ ਕੰਮ ਕਰਦੇ ਹੋ, ਉਹ ਮਾਪਣ ਨਿੱਖਿਆ ਹੋਈਆਂ ਦੱਸਿਆ ਤੇ ਵੀ ਦੱਸਦਾ ਹੋ, ਉਹ ਗੁਣਗੁਣ ਕਰਦੇ ਹੋ ਅਤੇ ਕੋਈ ਵੀ ਮਾਪਣੀ ਪੜ੍ਹਾਈ ਦਾ ਕੋਰਾ ਕਰੀ ਕਰਦਾ।

(ੳ) ਸੰਤਮ ਜੀ ਨੇ ਅਕਬਰ ਤੇ ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਦੀ ਉਚਾਰਨ ਵਿੱਚੋਂ ਇੱਕੋ ?

ਉੱਤਰ - ਸੰਤਮ ਜੀ ਨੇ ਅਕਬਰ ਤੇ ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਦੀ ਉਚਾਰਨ ਦਿਖਾ ਕਰੀ ਇੱਕੋ ਵਿਭਿੰਨ ਉਹ ਸੰਖਰ ਗਿਆਰ ਤੇ ਕੋਰੇ ਹੋਏ ਹੋਏ ਹੋ ਗੁਣਾਂ ਦੇ ਗੁਣਰੇ ਸਨ। ਉਨ੍ਹਾਂ ਨੇ ਭਾਏ ਸਭੁਠੇ ਇੱਕੋ ਦਿਲਿਆ ਕਰਦੇ ਕਰੀ ਜੀ ਕੀਤੀ।

(ੲ) ਸੰਤਮ ਜੀ ਨੇ ਨਿੱਖਿਆਂ ਕਰਦੇ ਕਰਨ ਘਾਂਠੇ ਕੀ-ਕੀ ਦੱਸਿਆ ?

ਉੱਤਰ - ਸੰਤਮ ਜੀ ਨੇ ਕਿਹਾ "ਇਲਿਆਠੀਠੀ, ਨਿੱਖਣ ਕਰੀ ਸਭੁਠੇ ਘਾਂਠੇ ਹੋਈ ਥਾਂ ਹੋ। ਪਰ ਨਿੱਖਣ ਵਾਸੇ ਹੋਰ ਮਾਰਕਾ ਥਾਠਾਂ ਤੇ ਵੀ ਨਿੱਖਣ ਜਾਂਦੇ ਹਨ। ਸਮੀ ਚਾਗੇ ਤਾਂ ਸਮੀ ਉਸ ਨਿੱਖਣ ਕਰਦੇ ਤੁਲੀ ਵੀ ਨਿੱਖਣ ਕਰਦੇ ਹੋ, ਨਿੱਖਣ ਠੱਠ ਦਿਲੇਗੇ ਤਾਂ ਤੁਹਾਡੇ ਗਿਆਰੇ ਪੁਰਾਣ ਤੇ ਘਾਸੀ ਹੋ ਜਾਵੇਗਾ।"



- 2) ਵਾਰ - ਵਿਕਰਪੀ ਪੁਸ਼ਤਕ
 (ੳ) ਗਾਠਿ (ਅ) ਸਾਥਾਜ (ੲ) ਵੀਏ ਚਾ ਵਿਗਠ
 (ੳ) ਜਗਤ ਚਾ ਗੀਠ (ੴ) ਗੱਥਰ ਗਿਮਾਰ

3) ਵਾਰਾਂ ਵਿੱਚ ਵਰਤੋ - Do it Yourself

- 4) ਖਾਰੀ ਥਾਈਂ ਕਰੋ -
 (1) ਗੱਥ ਮਹਿਮਾਪਰਾ (੨) ਗਰੀਠਿਕੜ (3) ਤਖਤੀ
 (ੴ) ਵਿਗਠ (ੵ) ਗੀਠ

ਵਿਮਾਰਕ

- 1) ਵਾਰਵਿਕਰਪੀ ਪੁਸ਼ਤਕ
 (ੳ) ਵੁਖੀ (ਅ) ਨਿਪੁੰਨ (ੲ) ਗਰ (ੳ) ਗੱਥਾ (ੴ) ਗੱਠਰਾ

- ੨) ਵਰ ਵਾਰੀ ਕਰੋ -
 (ੳ) ਗੱਠਰਾਂ ਨੇ ਪੁਸ਼ਤਕ ਕੀਤੀ।
 (ਅ) ਲ਼ੇ ਜਗਤਾ ਪਾਗ ਵਰ ਗਏ ਗਰ।
 (ੲ) ਉਰਾਂ ਵੀਮਾਂ ਤਖਤੀਆ ਵਰ ਕੀਮਾਂ ਗਰ।
 (ੳ) ਗੁਖੀ ਨੇ ਵੱਠਿਮਾਂ ਨੂੰ ਪਿਮਾਰ ਕੀਤਾ।
 (ੴ) ਵਿਕੀਆ ਗਤੇ ਵਾਈ ਨੇ ਕੁਈਮਾਂ ਥਾਪੀਆ।

H.W - Write ਸੁਥਰ-ਮਥ, ਵਾਰ ਵਥਰ, ਪੁਸ਼ਤਕ/ਕੀਤ

On your note - book. Rest of work on your book.

ਵਰਕਾਤਮਕ ਵਿਗਿਮਾਈ ਤੇ ਕਰਾਤਾ ਪਥ - Do it Yourself.

Short Q/Ans

ਉੱਤਰ - (ੳ) ਉਸ ਅਜ਼ਾਦੀ ਮਾਰਗ ਨੇ ਪਿੰਡ ਦੇ ਫ਼ੌਜਾਂ ਨੂੰ ਵੀ ਪੁੱਛਿਆ ਸੀ।
ਜੱਕੀ ਦਾ ਘਰ

ਉੱਤਰ - (ਅ) ਇਹ ਬਜ਼ੁਰਗ ਨੇ ਉਸਦੀ ਗੱਲ ਨੂੰ ਸੰਭਾਲਿਆ ਵੀ ਕਿਹਾ? "ਭਾਈ ਗੁੱਸਾ ਨਾ ਰਹੀ। ਜੱਕੀ ਤੁਹਾਡੇ ਟੱਬਰ ਦੀ ਮੌਜ਼ ਹੈ। ਉਹ ਮੈਂ ਤੁਹਾਡੇ ਉੱਗਾਂ ਦੇ ਘਰ ਡੱਡ ਮਾਉਂਦਾ ਹਾਂ।"

ਉੱਤਰ - (ੲ) ਉਹ ਮਾਰਗ ਵੀ ਕੌਣ ਰਈ ਮਾਇਆ ਸੀ? ਜੱਕੀ ਦੇ ਟੱਬਰ ਤਕ ਵਿਸ਼ੁਤਾ ਜੱਕੜ ਰਈ।

ਉੱਤਰ - (ੳ) ਉਸ ਬਜ਼ੁਰਗ ਨੂੰ ਪਿੰਡ ਵਿੱਚ ਵਿਸ਼ੁਤਾ ਨਾ ਹੋਣ ਤੇ ਵੀ ਮੁੱਠਿਆ? ਉਸਨੂੰ ਘੜਤ ਰੱਖ ਮੁੱਠਿਆ।

ਉੱਤਰ - (ੴ) ਸਿਮਾਇ ਉਸ ਬਜ਼ੁਰਗ ਨੇ ਉਹੀ ਬੰਨ੍ਹੇ ਫ਼ੌਜਾਂ ਨੂੰ ਕਿਵੇਂ ਸੰਬੰਧਤ ਕੀਤਾ? ਮੱਜੳ, ਜਾਨੂੰ ਗੱਲ ਕਹਿੰਦਿਆਂ ਉਸ ਨੇ ਅਥਰ - ਇਹ ਦਾ ਵਿਆਜ ਰੱਖਣ ਲਾਗੇ ਹੋ।

Long Q/Ans

ਉੱਤਰ - (ੳ) ਉਸ ਬਜ਼ੁਰਗ ਨੇ ਉਸ ਅਜ਼ਾਦੀ ਨੂੰ "ਫ਼ੌਜਾਂ ਦੀ ਮੌਜ਼ ਦਾ ਸੰਬੰਧਤ ਕੀਤੇ" ਕਿਉਂ ਕਿਹਾ?

ਉੱਤਰ - "ਇਹ ਤਾਂ ਪੁਰਾਣੇ ਹੀ ਚੜ੍ਹਦੇ ਸਨ ਕਿਹਾ ਹੈ। ਜਿਸ ਤੋਂ ਪਿੰਡ ਦੇ ਸਿਮਾਇ ਕਿਹਾ ਕਰਦੇ ਸਨ ਉਸੇ ਤੋਂ ਮਾਸੀ ਕਹਿੰਦੇ ਫ਼ੌਜ ਪਏ। ਇਹ ਜਗ੍ਹਾ ਸਮਝ ਵਿੱਚ ਮਾਉਂਦਾ ਹੈ ਕਿ ਜਗ੍ਹਾ ਇਸ ਦੇ ਪਿੰਡ ਵਿੱਚ ਦਾ ਚੜ੍ਹੀ ਕਰਨਾ ਵਿਸ਼ੇਸ਼ ਕਿਹਾ ਹੋਵੇਗਾ। ਜੇ ਤਾਂ ਕੋਈ ਕਿਸੇ ਕਿਸੇ ਨੂੰ ਚੜ੍ਹ ਮਾਉਂਦਾ ਤੇ ਕਿਸੇ ਕੋਈ ਕਿਸੇ ਕੋਲੋਂ ਅਥਰਾਵੇਗਾ। ਕੋਈ ਬੰਨ੍ਹੇ, ਇਸ ਦੀ ਇਹ ਮੌਜ਼ ਮਾਉਂਦੇ - ਦੁਆਰੇ ਦੇ ਚੜ੍ਹੇ ਪਿੰਡ ਵਿੱਚ ਮਸ਼ਹੂਰ ਹੈ, ਜਿਸ ਮਸ਼ਹੂਰ ਪੁੱਛ ਕਰੋ। ਚਾਰੀ ਮੌਜ਼ ਦੀ ਗੱਲ ਮਾਉਂਦੀ ਜਗ੍ਹਾ ਹੈ ਪਰ ਇਹ ਟੱਬਰ ਹੈ ਕੌਣ ਸੁਰੀਦ।"

ਉੱਤਰ - (ਅ) ਉਹ ਬਜ਼ੁਰਗ ਮਾਉਂਦੀ ਮੌਜ਼ ਕੌਣ ਦਿਆ ਚਾਰੇ ਵੀ ਮੱਠੇ ਕੌਣਾ?

ਉਤਰ - ਉਹ ਮਾਪਦ ਪਰਿਠਾਹ ਦੀ ਅੱਤ ਖਾਹ ਜਿਥਲਾ ਤੇ ਮਾਪਦ
 ਮਾਪ ਨਾਹ ਗੱਲਾਂ ਕਰ ਕੰਗੋ, "ਮਾਸੀ ਢਾਹ ਭਗ ਗੰ"
 ਢੰਗ ਦੀਆਂ ਮਾਪਦੀਆਂ - ਮਾਪਦੀਆਂ ਕੋਈਆਂ ਤੇ। ਏ
 ਮੂੰਹ ਮਾਗੀਰਾ ਇੱਕ ਹਨ ਤੇ ਇੱਕ ਮੂੰਹ ਖੜਾ ਮਾਠਮੇ
 ਤੇ ਠਿਹਾ ਵੀ ਕੋਰ ਸਾਡੀ "ਕੋਰ ਵਾਡੇ" ਮਾਠਦੇ ਹਨ
 ਕਿਉਰਿ ਦੇ ਰਿੱਤ ਪੀਕੀਆਂ ਰਿਪੁੱਤ ਸਾਡੀ ਹੁਣੀ ਇੱਕ
 ਇੱਕ ਕੋਰਾ ਹੋਲਾ ਸੀ। ਮਾਸੀ ਮੂੰਹ ਸਾਰੇ - ਪੁੱਜਦੇ
 ਨਹੀਂ ਜਾਂ। ਪਰ ਦਾ ਕੁਝ ਕੋਈ ਗਿਜ਼ਾਰੇ ਮਸਾਂ ਮੂੰਹ
 ਚਾਹਿਆਂ ਦੀ ਡੰਤ ਸੀ ਮਹਿਨਿਆਂ ਸਿਮਾਦ ਕੋਰ ਇੱਕ ਹੀ
 ਹੁਜ਼ਾਮ ਕਰਦੇ ਸਨ। ਸਮੇਂ ਮਾਨ ਕੋਰਾ ਤਾਂ ਨਹੀਂ ਕਿੰ
 ਪਰ ਕੋਰ ਦਾ ਨਾਮ ਨਾਡੀ ਕੋਰ ਨਾਨ ਪੱਕਾ ਕੁਝ ਗਿਆ।
 (ੲ) ਸਿਮਾਦੀ ਉਮਰ ਦੇ ਬਜ਼ੁਰਗ ਨੇ ਜੋ ਨਸੀਠ ਇੱਤੀ ਤੇ,
 ਜੋਖੋਪ ਇੱਕ ਦਿੱਖ।

ਉਤਰ - ਤੁਸੀਂ ਸਾਰੇ ਹੀ ਗੱਲੇ ਨਾਨ ਉਮਰ ਇੱਕ ਡੇਰੇ ਤੇ। ਤੁਸੀਂ ਇੱਕ
 ਦੂਜੇ ਤੇ ਜਿਵੇਂ ਵੀ ਖੁਸ਼ਾ ਕੀਏ ਤੇ, ਡੇਰੇ ਜਾਂਦੇ ਤੇ।
 ਇੱਕ ਦੂਜੇ ਤੇ ਕਹਿ ਵੀ ਕੀਰੇ ਤੇ ਤੇ ਸੁਣ ਵੀ ਕੀਰੇ ਤੇ।
 ਇਹ ਸਭ ਸਾਡਾ ਮਾਪਦ ਜਾਂ ਮਾਪਦ ਪਿੰਡ ਦਾ ਮਾਸਕੀ
 ਹੈ। ਪਰ ਜੇ ਕੋਈ ਉਪਰ ਮਾਮਦ ਹੋ ਜਾਣ ਤਾਂ ਸਾਡੀ ਮੂੰਹ
 ਜੋਠਾਨ ਕੇ ਬੰਦਾ ਢਾਗੀਰਾ ਤੇ। ਗੱਲ - ਖਾਂਤ ਕਹਿਲਿਆਂ ਜਾਂ
 ਮਾਮ ਮਠਾਹ ਇਹਾ ਇੱਕ ਸਾਡੀ ਉਮਰ ਮਾਠੁ ਗਿੱਠ
 ਦਾ ਖਿਆਰ ਮੱਖਣ ਢਾਗੀਰਾ ਤੇ। ਜੇ ਕੋਈ ਕੋਈ ਖਾਹਕੀ
 ਖੀਰਾ ਸਾਡੇ ਪਿੰਡ ਦੇ ਕਿਸੇ ਖੇਰ ਖਾਹ ਕੋਰ ਪੁੱਠ
 ਕੁਝ ਤਾਂ ਜੋਖੋਪ ਇੱਕਿਆਂ ਸਾਡੀ ਬੜੀ ਸੇਕੋਰ ਤੇ ਕੇਮ
 ਕੀਰਾ ਢਾਗੀਰਾ ਤੇ।

Back Exercises

2) ਬਹੁਵਿਕਰਪੀ ਯੁਕਤ - (ੳ) ਗਿਰੁਤਾ ਜੈਕੁਨ (ਅ) ਢੰਗ ਦੀ ਸਮੱਸ
 (ੲ) ਇੰਦ ਬਨਰਗ ਤੂੰ (ੳ) ਗੱਤ ਤੂੰ ਖਤਮ ਕਰਕੇ (ੴ) ਰਵੈਈਆ

3) ਫਾਰਾਂ ਇੰਦ ਢੰਕੇ - Do it yourself on notebook

4) ਖਾੜੀ ਖਾਣਾ ਭੰਕੇ -
 1) ਚੁੜ੍ਹੇ 2) ਢੰਗ ਦੇ 3) ਗਿਰੁਤੇਚਾਰ
 4) ਪੰਜਾ ਭੁੜਾ 5) ਕੁੜੇਢਾਕੇ
 ਇਸ਼ਕਾਰਕ

1) ਬਹੁਵਿਕਰਪੀ ਯੁਕਤ
 (ੳ) ਜਾਫ਼ਰਾਹ (ਅ) ਢੰਕਾ (ੲ) ਇੰਦ
 (ੳ) ਇਸ਼ਕਾਰਕ (ੴ) ਉਤਮ ਪੁਰਖ

2) ਹੇਠ ਲਿਖ ਫਾਰਾਂ ਇੰਦ ਸਾਂਝੇ ਢੰਕੇ ਤੇ ਲਿਖ -

- (1) ਕੁੜੀ ਹੱਜੀ ਤੂੰ ਢੰਕੀ ਹੈਂ। ਸਾਮ ਸਾਂਝੇ
- (2) ਸਭਿਨ ਨੇ ਸੈਂਕੜਾ ਸਾਰਿਆ। ਖਾਮ ਸਾਂਝੇ
- (3) ਛੀੜੀਕਾ ਦੀ ਟੀਮ ਹਰ ਗਈ। ਖਾਮ ਸਾਂਝੇ
- (4) ਗੁਰੂ ਨਾਨਕ ਦੇਣ ਦੀ ਸਿੱਖਾਂ ਦੇ ਚਰਿਤ ਗੁਰੂ ਸਨ। ਖਾਮ ਸਾਂਝੇ
- (5) ਮੜੀ ਗਾਫਾਂ ਦਾ ਢੰਗ ਨਾਂਦ ਹੈ। ਇਕੱਠ ਢਾਕੜ ਸਾਂਝੇ
- (6) ਮੈਨਾ ਬੜਤ ਸਾਰਿਆ ਤੂੰ ਢੰਕੀ ਹੈਂ। ਢਾਕੜਾਕੜ ਸਾਂਝੇ

ਹਰਕਾਤਮਕ ਵਿਰਿਆਈ ਸਤੇ ਲੰਗਤਾ ਪਰਖ

Do it Yourself.

ਪਾਠ - II ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ

Short Q/Ans

ਉੱਤਰ (ੳ) ਛੁੱਟੀਆਂ ਤੋਂ ਪਹਿਲਾਂ ਮਾਪਿਆਪਰਾ ਨੇ ਇਲਿਆਰਬੀਆਂ ਨੂੰ ਵੀ ਦਿੱਤਾ।
ਉੱਤਰ - ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ

ਉੱਤਰ (ਅ) ਸਰਬਜੀਤ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਕਿਉਂ ਨਹੀਂ ਸੀ ਕਰਨਾ ਚਾਹੁੰਦੀ?
ਉੱਤਰ - ਕਿਉਂਕਿ ਮਾਪਿਆਪਰਾ ਛੁੱਟੀਆਂ ਦੇ ਵੇਲੇ ਨੂੰ ਚੋਗੀ ਤਰ੍ਹਾਂ ਨਹੀਂ ਦੇਖਦੀ।

ਉੱਤਰ (ੲ) ਰਣਜੀਤ ਨੇ ਸਰਬਜੀਤ ਨੂੰ ਵੀ ਕਹਿ ਕੇ ਸਮਝਾਇਆ ਸੀ ਕਿ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਕਾਫ਼ੇ ਢੁਕੀ ਵੀਡਾ ਜਾਂਦਾ ਹੈ।
ਉੱਤਰ - ਰਣਜੀਤ ਨੇ ਸਰਬਜੀਤ ਨੂੰ ਕਿਹਾ ਕਿ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਮਾਪਣ ਵਾਲੀ ਵੀਡਾ ਜਾਂਦਾ ਹੈ।

ਉੱਤਰ (ੳ) ਮਾਪਿਆਪਰਾ ਨੇ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਕਿਉਂ ਦੇਖਿਆ ਸੀ?
ਉੱਤਰ - ਮਾਪਿਆਪਰਾ ਨੇ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਵੱਡੀ ਬੇਕਿਮਾਰੀ ਨਾਲ ਦੇਖਿਆ ਸੀ।

ਉੱਤਰ (ੴ) ਗਣਿਤ ਤੇ ਇਲਿਆਰਬੀ ਦੇ ਚੰਗੇ ਪਾਠ ਦੇ ਸਭਾਨ ਬਦਲਦੇ ਢੁਕੀ ਕਿਉਂ ਕਹਿ ਕੇ ਰਹੇ ਸਨ?
ਉੱਤਰ - ਕਿਉਂਕਿ ਗਣਿਤ ਤੇ ਇਲਿਆਰਬੀ ਦੇ ਸਭਾਨ ਉਨ੍ਹਾਂ ਨੂੰ ਮੌਜੂਦਗੀ ਢੁਕੀ ਰਹੇ ਸਨ।

Long Q/Ans

ਉੱਤਰ (ੳ) ਰਣਜੀਤ ਤੇ ਸਰਬਜੀਤ ਕੌਣ ਸਨ? ਉਨ੍ਹਾਂ ਦੀ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਖੁੱਟੀ ਵੀ ਬਣਿਸ਼ ਹੋਈ ਹੈ?
ਉੱਤਰ - ਰਣਜੀਤ ਤੇ ਸਰਬਜੀਤ ਦੋਨੋਂ ਪੰਜੀਆਂ ਸਰਬਜੀਆਂ ਸਨ। ਉਹ ਦੋਨੋਂ ਦੁਸ਼ਮਣੀ ਜਗਤ ਦੀਆਂ ਇਲਿਆਰਬੀਆਂ ਸਨ। ਗਰਮੀਆਂ ਦੀਆਂ ਛੁੱਟੀਆਂ ਤੋਂ ਪਹਿਲਾਂ ਮਾਪਿਆਪਰਾ ਨੇ ਉਨ੍ਹਾਂ ਨੂੰ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਦਿੱਤਾ ਸੀ। ਰਣਜੀਤ ਨੇ ਸਰਬਜੀਤ ਨੂੰ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਕਰਨ ਵਾਲੀ ਕਿਹਾ, ਪਰ ਸਰਬਜੀਤ ਨੇ ਜੁਆਬ ਦਿੱਤਾ ਕਿ ਮੈਂ ਤਾਂ ਇਸ ਬਾਰੇ ਕਿਸੇ ਵੀ ਇਸ਼ਾਰੇ ਦਾ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਨਹੀਂ ਕਰਨਾ। ਰਣਜੀਤ ਨੇ ਕਿਹਾ ਕਿ ਪਹਿਲਾਂ ਤਾਂ ਤੂੰ ਜਾਗ ਕੇ ਵੇਲਾ ਕਰਦੀ ਸੀ, ਪਰ ਇਸ ਬਾਰੇ ਤੂੰ ਵੀ ਹੋ ਗਿਆ। ਸਰਬਜੀਤ ਨੇ ਕਿਹਾ ਕਿ ਮੈਂ ਹੋ ਜਾਣ ਸੀ ਕਿ ਮਿਸ਼ਰਤ ਨਾਲ ਛੁੱਟੀਆਂ ਦਾ ਵੇਲਾ ਕਰਨੇ ਜਾਂਦੀ ਹਾਂ ਪਰ ਮਾਪਿਆਪਰਾ ਜਾਣੇ ਵੇਲੇ ਨੂੰ ਚੋਗੀ ਤਰ੍ਹਾਂ ਦੇਖਦੇ ਹੀ ਨਹੀਂ। ਰਣਜੀਤ

ਨੇ ਕਿਹਾ ਕਿ ਡੂੰਘੀਆਂ ਦਾ ਵੇਗ ਅਜੀ ਮਾਪਿਆਪਕਾਂ ਵਧੀ
ਅਜੀ ਸਗੋਂ ਮਾਪਣ ਵਧੀ ਕਰਦੇ ਹਾਂ, ਇਸ ਇੱਕ ਨਾਡਾ ਹੀ
ਠਾਇਦਾ ਹੈ।

(ਸਮ) ਮਾਪਿਆਪਕਾਂ ਨੂੰ ਇਲਿਆਰਥੀਆਂ ਤੋਂ ਡੂੰਘੀਆਂ ਦੇ ਵੇਗ ਦਾ
ਕੀ ਮਹੱਤਵ ਦਿਖਾਓ ?

ਉੱਤਰ — ਮਾਪਿਆਪਕਾਂ ਨੇ ਕਿਹਾ ਕਿ ਚੰਗੇ, ਮੁੱਢਲੇ ਪ੍ਰੀਖਿਆਂ ਦੇ
ਮਾਰ ਮੁਠਾਓ ਡੂੰਘੀਆਂ ਦੇ ਵੇਗ ਇੱਕ ਚਾਏ ਗਏ ਹਨ। ਤੁਹਾਡੇ
ਇੱਕ ਨਿਰਠੇ ਇਲਿਆਰਥੀ ਇਲਿਆਰਥ ਅਤੇ ਗਏ ਇਲਿਆਰਥੀ
ਦੇ ਪ੍ਰਭੂ ਪ੍ਰੀਖਿਆ ਇੱਕ ਬਦਲ ਵਧੀ ਕੀ ਹੋ ਸਕਦਾ,
ਉਸ ਨੇ ਡੂੰਘੀਆਂ ਦਾ ਵੇਗ ਪੂਰਾ ਕੀ ਕੀਤਾ ਸੀ।
ਇਸ ਵਧੀ ਤੁਹਾਡੇ ਡੂੰਘੀਆਂ ਦਾ ਵੇਗ ਪੂਰਾ ਕਰਨਾ ਚਾਹੀਦਾ
ਹੈ, ਇਸ ਇੱਕ ਹੀ ਤੁਹਾਡਾ ਸਰ ਦਾ ਉੱਤਰ ਹੈ।

ਕਗੜੀ ਦੀ ਸਿਖਿਆ

ਵਿਮਾਨ ਅਤੇ ਚਾਰ ਪੁੱਤਰ — ਇਸ ਕਗੜੀ ਤੋਂ ਸਾਡੇ
ਇਹ ਸਿਖਿਆ ਸਿਕਾਈ ਹੈ •
ਕਿ ਸਿਰਠ ਹੀ ਅਜੀ ਖਜ਼ਾਨਾ ਹੈ, ਕੇਰਾ ਅਜੀ ਮਾਪਣ
ਵੇਗ ਸਿਰਠ ਨਾਡ ਕਰਦੇ ਹਾਂ ਤਾਂ ਸਾਡੇ ਕਰ ਪ੍ਰਾਪਤ
ਹੋਦਾ ਹੈ। ਸਿਰਠ ਕਰ ਟਾਕ ਹਮੇਸ਼ਾ ਮਾਪਣੀ
ਜ਼ਿੰਦਗੀ ਇੱਕ ਸਠਕ ਹੋਦੇ ਹਨ।

ਮੁਗੜ — write and learn ਮੁਗੜ
ਦ, ਸ, ਹ ਮਾਪਣ ਟਾਕ

2 ਬਰਫ਼ਦਰਸ਼ੀ ਪੁਸ਼ਪ -

(ੳ) ਗੁਲਿਮਾਰ (ੴ) ਆਪਣੇ ਰੰਗ (ੲ) ਬਰਫ਼ਦਰਸ਼ੀ ਫੁੱਲ
 (ੳ) ਫੁੱਲਾਂ ਦੇ ਰੰਗ ਵਿੱਚ (ੴ) ਮਨਾਂ ਪਾਸ ਰੱਖੇ ਸੀ

3 ਫੁੱਲਾਂ ਵਿੱਚ ਫੁੱਲ - Do it yourself on note-book

4 ਖਾਸੀ ਕਾਫ਼ੇ ਰੰਗ -

(1) ਪੱਕੀਆਂ (2) ਲਾਲੀ (3) ਫੁੱਲਾਂ
 (4) ਖੜਕੀਆਂ (5) ਗੁਲਾਬ (6) ਮੱਧਰ

5 ਠੀਕ / ਗਲਤ

(ੳ) ✓ (ੴ) x (ੲ) ✓ (ੳ) x (ੴ) x

ਵਿਸ਼ਾਕਰਮ

1 ਬਰਫ਼ - ਦਰਸ਼ੀ ਪੁਸ਼ਪ -

(ੳ) ਨਕਾਇਰ (ੴ) ਬਰਫ਼ ਸਿਮਾਰ (ੲ) ਸਿੱਤਰ
 (ੳ) ਆਮ ਨਾਂ (ੴ) ਪੁਸ਼ਪਦਾਰ (ੲ) ਸੀਖਿਆਦਾਰ

2 ਫੁੱਲਾਂ ਦੀ ਵਿਸ਼ੇਸ਼ਤਾ -

(ੳ) ਸੁੰਦਰ
 (ੴ) ਜੋਜਰ
 (ੲ) ਪੜਕਾਣ
 (ੳ) ਵਿਸ਼ੇਸ਼
 (ੴ) ਵਿਸ਼ੇਸ਼
 (ੲ) ਆਮ ਨਾਂ
 (ੳ) ਵਿਸ਼ੇਸ਼
 (ੴ) ਵਿਸ਼ੇਸ਼

ਰਚਨਾਤਮਕ ਗਤੀਵਿਧੀਆਂ ਅਤੇ ਲੇਖਨ ਪਾਠ

Do it Yourself.

- (1) ਮੇਰੀ ਉੱਤਰ ਸੱਗੇ L ਦਾ ਤਿਸਰਾ ਜਗਾਉ
(ਬ) ਤਿੰਗ (ਸ) ਪੁਤਿੰਗ (ੲ) ਖਿਲਤੀ ਤਿੰਗ
(ਗ) ਤਿਲਗਾਂ ਤੇ (ੳ) ਕੱਖਰਾ (ੲ) ਮੱਪਈ (ਖ) ਘਾਣਦਾਰੀ

- | | |
|-----------|------------|
| (੩) ਨਾਲਿਣ | ਗਿਲਮਾਨਣ |
| ਚਾਈ | ਮਪਿਲਮਾਪਕਾਂ |
| ਭੈਣ | ਗਈ |
| ਮਪੋਰ | ਮਾਤਾ |
| ਮਾਮੀ | ਮਾਕਣ |

- | | |
|------------|---------|
| (4) ਘਾਣਗਾੳ | ਪੁੰਜਾਬੀ |
| ਨਵਾਬ | ਕੁਕੜ |
| ਦੁਮਕੀ | ਦਮ |
| ਖੳਤਾ | ਮੱਧ |

- (5) ਖਾੳੀ ਸਾਣਾ ਭੰਗੇ।
(ਬ) ਭੰਗ (ਸ) ਕੳਕੳਾ (ੲ) ਮੋਰ (ਸ) ਗਾਇਕ (ੳ) ਚੱਥਣ

(6) ਤਿੰਗ ਖੳੳੇ

1. ਮਾਤੀ ਕੁੳੀ ਝਕਰਾੳ ਹੈ।
2. ਮੇਰੇ ਚਾਈ ਜੀ ਮਾ ਰੇ ਰੳ।
3. ਦੁੳੳ ਘਾੳ ਚਰਦਾ ਹੈ।
4. ਘੋੳੀ ਚੳੳੇ ਸਗੀ ਹੈ।
5. ਮੇਰੀ ਜੰਗੳ ਦੀ ਗਈ ਹੈ।
6. ਮੇਰੇ ਕੇ ਕੁੳੀ ਕੁੳੀ ਸਮਝਾਇਲਾ।
7. ਉੳਈ ਚਾਈ ਡਾਕੳਰੀ ਤੇ।
8. ਮਪਿਲਮਾਪਕ ਕੇ ਕੁੳੀ ਕੁੳੀ ਦੁੳਾਇਲਾ।
9. ਕਾਉਈ ਕੇ ਚੳਈ ਦੀ ਰੋਈ ਖੋ ਕਈ।
10. ਉੳਈ ਗੁਲਮਾਨਣ ਮੇਰੀ ਚਾਈ ਹੈ।

7. ਪੁਕਿੰਗ ਸ਼ਬਦਾਂ ਤੇ ਦਿਸਤਰੀ ਕ੍ਰਿੰਗ ਸ਼ਬਦਾਂ ਤਕ ਲਿਖਾਉ।

ਸਪੰਗ	ਸਪੰਗਰ
ਉੱਠ	ਉੱਠਣੀ
ਗੱਭਰੂ	ਗੱਭਿਆਰ
ਨਰ	ਮਾਰਾ
ਜਣਾਈ	ਚੀ
ਸਗਰਾ	ਸੱਸ
ਕੁਟੋਗ	ਕੁਟੋਰਨ

8. ਦਿਸਤਰੀ ਕ੍ਰਿੰਗ - ਸੱਗ, ਫਿੱਟ, ਸਾਡੀ, ਜਣਾ, ਰੰਤ

9. ਪੁਕਿੰਗ - ਸੁੱਜ, ਘਿਉ, ਤੌਰ, ਛੱਪ, ਭੁਝਾਏ

10. ਕ੍ਰਿੰਗ ਵਾਲੇ ਸ਼ਬਦਾਂ ਲਈ ਢੁਕਵੇਂ ਸ਼ਬਦ ਲਿਖੋ।
1. ਸਪੰਗਰ ਦੀ ਥਾਂ ਘਜਾ ਰਹੀ ਹੈ। (ਸਪੰਗ)
 2. ਉੱਠਣੇ ਮਾਤਾ ਜੀ ਰੋਈ ਬਣਾ ਰਹੇ ਹਨ। (ਮਾਤਾ)
 3. ਛੱਪਗਈ ਕੁਰਸੀ ਤੇ ਬੈਠੀ ਹੈ। (ਛੱਪਗਈ)
 4. ਪੱਡਮਾਈ ਖੜਾ ਦੜ ਜਾ ਰਹੀ ਹੈ। (ਪੱਡਮਾਈ)
 5. ਸਾਡੀ ਪੱਕੀ ਸੁਗਿਰਨ ਹੈ। (ਸੁਗਿਰਨ)

Back Exercises

1. ਸਹੀ ਉੱਤਰ ਠੀਕ ਲਿਖ ਕੇ ਦਿਓ।

- (ੳ) ਉੱਤਰ (ਅ) ਮਾੜਾ (ੲ) ਜਿੱਤਨਾ (ੳ) ਠੀਕ
- (ੴ) ਪਿੱਛੇ (ੲ) ਤਿਆਰੀ (ੴ) ਸਾਧ

2. ਇੱਠੀ ਸੁਖਰ ਕੀ ਹੋਣ ਲਈ ?

ਉੱਤਰ - ਇੱਠ - ਕੁਝ ਦੇ ਉੱਤਰ ਅਰਥ ਹੋਣ ਵਾਲੇ ਸੁਖਰਾਂ ਨੂੰ ਇੱਠੀ ਸੁਖਰ ਆਖਦੇ ਹਨ। ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਇੱਠ ਅਨਿੱਠੇ ਦੋ ਤਿੰਨ ਸੁਖਰ ਹਨ।

(ਅ) ਇੱਠੀ ਸੁਖਰਾਂ ਨੂੰ ਘੱਟ ਕਰ ਦੇ ਕੀ ਫਾਇਦਾ ਹੋ ਸਕਦਾ ਹੈ ?

ਉੱਤਰ - ਇੱਠੀ ਸੁਖਰ ਸਾਰੇ ਸੁਖਰ ਵਿਚਕਾਰ ਇੱਠ ਵਾਲਾ ਕਰਦਾ ਹੈ। ਅਨਿੱਠੇ ਸੁਖਰਾਂ ਦੇ ਵਿਚਕਾਰ ਇੱਠ ਵਾਲਾ ਕਰਦਾ ਹੈ।

3. ਹੇਠ ਲਿਖੇ ਸੁਖਰਾਂ ਦੇ ਇੱਠੀ ਸੁਖਰ ਕੜ ਕੇ ਲਿਖੋ -

- (ੳ) ਜਿੱਤ (ਅ) ਸਿੱਖਿਆ (ੲ) ਘਰੀ (ੳ) ਸੀਮਾ

4. ਹੇਠ ਲਿਖੇ ਸੁਖਰਾਂ ਦੇ ਇੱਠੀ ਸੁਖਰ ਲਿਖੋ

- | | |
|-----------|-------------|
| (i) ਗਰ | (vi) ਪੁੱਠਾ |
| (ii) ਸੁਫਲ | (vii) ਮਾੜਾ |
| (iii) ਹੋਣ | (viii) ਮਰਦੀ |
| (iv) ਕੁਠਾ | (ix) ਹੋਣ |
| (v) ਚਾਨਣ | (x) ਜਿੰਮਾਰਾ |

5. ਖਾੜੀ ਲਾਭ ਕੜੋ।

- (ੳ) ਹੋਰ (ਅ) ਸੱਚ (ੲ) ਸੁੱਖ (ੳ) ਡੇਰੀਆਂ (ੴ) ਪੱਛਮ

6. ਇੱਠੀ ਸੁਖਰ ਲਿਖ ਕੇ ਦਿਓ -

- (i) ਜਿੱਤ - ਜਿੱਤ ਵੱਡੇ ਸਭ ਨੂੰ ਹੀ ਹੋ ਸਕਦਾ ਹੈ।
- (ii) ਤਰਾ - ਸੱਚ ਤਰਾ ਆਖਦਾ ਹੈ।
- (iii) ਪੁਰੇਜ਼ - ਦੋ ਤਿੰਨ ਸਾਰੇ ਪੰਜਾਬੀ ਪੁਰੇਜ਼ ਹੋ ਸਕਦੇ ਹਨ।
- (iv) ਦੁਸ਼ਮਣੀ - ਸਾਰੇ ਕਿਸੇ ਤਰ੍ਹਾਂ ਦੁਸ਼ਮਣੀ ਨਹੀਂ ਕਰ ਸਕਦੇ।
- (v) ਸੁਫਲ - ਸੁਫਲ ਦੋ ਤਿੰਨ ਸੁਫਲ ਹੈ।

7th History

Ch-4

The Delhi Sultanate

T Tick (✓) the correct answer.

1. Iltutmish
2. Bahlol Lodhi
3. Alau-ud-din Khalji
4. Post of Cambay
5. Tughlaq Dynasty

Key words

1. Clan - community of common ancestor
2. Dynasty - A family of kings
3. Prostration - to lie on front with face towards the ground.
4. Tribute - payment to powerful ruler, in order to be protected
5. Revolts - Violent action to overthrow a ruler
6. Regent - someone governs in place of king who is minor

Rest of the keywords will remain same as given in book.

Answer:

- | | |
|------------------------------------|--|
| 1. Razia | (d) the only woman ruler of the Delhi Sultanate. |
| 2. Balban | (c) believed in absolute monarchy |
| 3. Iltutmish | (a) nominated his daughter to the throne |
| 4. Aibak | (b) founder of the Slave Dynasty |
| 5. Ala-ud-din Khalji | (e) introduced control of prices and rationing system. |
| 6. Muhammad-bin-Tughlaq introduced | (g) token currency |
| 7. Doab means | (f) land between two rivers |
| 8. Bahlol Lodi | (i) Founder of Lodi dynasty. |
| 9. AD 1526 | (h) First Battle of Panipat was fought. |

III. State whether the following statements are True Or False:

1. Qutub-ud-din Aibak built the Qutab Minar of Delhi.
True
2. Balban believed in absolute monarchy.
True.
3. Malik Kafur was also known as Hazar Dinari because he was bought for a thousand dinars.
True.
4. Muhammad-bin-Tughlaq is known as a 'mixture of opposites'.
True.
5. Firoz Shah Tughlaq was Muhammad-bin-Tughlaq's son.
False. Firoz Shah Tughlaq was Muhammad-bin-Tughlaq's cousin.
6. Sikandar Lodi lost control over the Gangetic Valley.
False Ibrahim Lodi lost control over the Gangetic Valley.
7. Khizr Khan was the founder of Sayyid dynasty.
False. Khizr Khan was the deputy of Sayyid dynasty.

Time To Learn

I. Fill in the blanks:

1. **Qutab-ud-din Aibak** was the real founder of the Slave Dynasty.
2. **Razia** was nominated by Iltutmish as his successor.
3. Balban's theory of kingship was **divine**.
4. **Jalal-ud-din Khalji** was the first Khalji ruler.
5. Malik Kafur led many campaigns in **North India** and every time he brought a huge booty of gold, jewels, elephants and horses.
6. **Amir Khusrau** was a well-known poet in the court of Ala-ud-din Khalji.
7. Ala-ud-din constructed a big tank called **Hauz khas**.
8. Muhammad-bin-Tughlaq shifted his capital from **Delhi to Devagiri**.
9. **Amir Timur** invaded India in AD 1398.
10. Muhammad-bin-Tughlaq introduced **copper** coins in place of gold and silver coins.

IV. Answer the following questions briefly:

Question 1.

What were the difficulties that Iltutmish had to face and how did he tackle them?

Answer:

Iltutmish position was challenged from the very beginning since he had no hereditary claim over the throne. But Iltutmish proved himself as a strong and efficient ruler.

Question 2.

Write in brief about the rise and fall of Razia Sultan.

Answer:

Razia was brave, intelligent, and possessed all the royal qualities. She dressed like a man and used to sit in the open darbar to transact business. She even rode horses. She was a talented woman and regarded the welfare of her subjects as an essential duty.

There was chaos and disorder in the country when Razia came to the throne. But being an able ruler, she put the things in order. She was a wise, just, and benevolent ruler. She became the true leader of her armies.

But some nobles did not like to be ruled by a woman. She favoured a slave called Yakut and this was one of the causes of her abrupt fall.

Question 3.

Who was Balban? What steps did he take to consolidate the Sultanate?

Answer:

Balban was the father-in-law of Nasir-ud-din. He came to power after the death of Nasir-ud-din in AD 1266.

The steps taken by Balban to consolidate the sultanate were:

1. Balban reformed the army to increase its efficiency.
2. Balban created an awe and respect in the minds of the people.
3. He made the people and the nobles loyal to the crown.
4. Balban put the administration in order.
5. He checked the Mongol invasions successfully.
6. He organised a very efficient spy system.
7. He strictly believed in the 'divine theory' of kingship, i.e., king is the representative of God on earth.

Question 4.

Who was the greatest of the two — Iltutmish or Balban? Give reason for your answer.

Answer:

Iltutmish was the greatest ruler because of the following reasons :

1. The Turkish nobles who had challenged his claim to the throne were suppressed.
2. The revolt of the Khilji governor of Bengal was crushed.
3. The power of his external rivals, the rulers of Ghazni and Multan, was destroyed.

VII GIVE REASON

Question

Nobles rebelled against Razia.

Answer:

Nobles rebelled against Razia because they did not like the idea of being ruled by a woman.

Question

Muhammad-bin-Tughlaq's token currency failed.

Answer:

Muhammad-bin-Tughlaq's token currency failed because the token currency was made of copper and brass and had equal value as silver and gold coins. However, the experiment failed because people started forging these coins at their homes.

Question 5.

Discuss briefly Ala-ud-din's conquest of the North.

Answer:

Alauddin first captured the fort of Ranthambore and then attacked Chittor, the capital of Mewar. The Rajputs fought bravely but lost the battle. This was followed by the capture of the important cities of Mandu, Ujjain, Dhar and Chanderi in Malwa. By 1305 CE, Alauddin became the master of the whole of North India.

Question 6.

What was the system of chehra and dagh introduced by Ala-ud-din Khalji?

Answer:

Ala-ud-din introduced a system of chehra, an identity card system for every soldier, and dagh to brand horses to be used specifically for wars.

Question 7.

What was the consequence of Muhammad-bin-Tughlaq's project of shifting his capital?

Answer:

Consequences : In the absence of the sultan, Delhi was now exposed to renewed attacks by the Mongols. Realizing his folly, Muhammad bin Tughlaq shifted his capital back to Delhi after 2 years. The people were ordered to return. The suffering and mental agony caused great resentment. The experiment was a dismal failure. It had drained the treasury and reduced the grand and prosperous capital of Delhi to a mere shadow of its former self. Daulatabad, a monument of misdirected energy, became a deserted city.

Question 8.

Who was Timur? When did he invade India?

Answer:

Amir Timur was a founder of the Sayyid Dynasty. Amir Timur invaded India in AD 1398.

Question 9.

Why is Muhammad-bin-Tughlaq called an ill-starred idealist?

Answer:

Muhammad-bin-Tughlaq called an ill-starred idealist because:

1. He was a great philosopher and mathematician.
2. He was a great general but he lacked common sense and practical judgement.
3. He was a Sunni Muslim but did not allow the ulemas to interfere in state affairs.

7th History

Ch-5

Administration, society and culture under
the Delhi Sultanate

I Tick (✓) the correct answers

1. Ajmer
2. Ibn Batuta
3. Flute
4. Diwan-i-Arz
5. Munsif

All Keywords will remain same as in the book.

What To Learn

Fill in the blanks:

1. The village administration was managed by **Muqaddam**.
2. Firoz Shah Tughlaq made the **Iqtdary** system hereditary.
3. **Iqtdar** received Iqtas.
4. **Firoz Shah Tughlaq** arranged irrigation facilities for the farmers.
5. The mixture of Persian and Hindu style in architecture is called **Indo-Islamic** style.

II. Match Column A with Column B:

Answer:

- | | |
|---------------------|-------------------------------------|
| 1. Qazi | (e) Chief Justice |
| 2. Tughlaqabad Fort | (c) Delhi |
| 3. Qutab Minar | (b) Qutub-ud-din Aibak |
| 4. Urdu | (f) Camp |
| 5. Minhaj-us-Siraj | (a) Historian |
| 6. Amir Khusrau | (d) Great poet of Persian and Hindi |

1. Urdu, a new language, developed in the Sultanate period.

True

2. The Sufi saints believed in one God.

False.

3. The Sultanate was a military rule.

True.

4. The village administration was managed by the Bakshi.

False. The village administration was managed by the Muqaddam.

5. The culture of the sultanate period saw healthy blending of Hindu and Muslim traditions.

True.

1. What is the name of this form of music?

Ans. Qawwali performance.

2. Name the famous personality who created this.

Ans. Amir Khusrau.

3. What is the theme of the music?

Ans. Ghazal, a combination of beautiful poetry with melody, is also a contribution of the Sultanate period.

IV. Answer the following questions briefly:

Question 1.

How did the government function during the Sultanate Period?

Answer:

The government run under various departments. Each department was supervised by a minister or a high official.

The most important departments were:

1. Diwan-i-wazarat or the revenue department headed by the Chief Minister called Wazir.
2. Diwan-i-Arz or the military department headed by Ariz- i-Mumalik. It was the responsibility of this department to recruit, equip and pay the army.
3. Diwan-i-Risalat dealing with religious matters, pious foundations and stipends to scholars. It was presided over by Chief Sadr also known as Chief Qazi. The Chief Qazi was the head of department of justice.
4. Diwan-i-Insha dealt with all kinds of domestic as well as foreign correspondence. The village administration was managed by the Muqaddam. The Munsif supervised the accounts of the village while Patwari kept the local records.

Question 2.

What do you understand by Iqta system? How was this system organised?

Answer:

The system of granting revenue from a piece of land or a village to an officer instead of paying him a cash salary was called the Iqta system. Under this system, an officer (iqtadar) would collect the revenue from his territory (iqta). He would keep a certain amount of his salary from this revenue and another part of revenue was spent for maintaining the soldiers for the Sultan. They also had to pay a fixed amount annually to the Sultan. The officer had to keep a detailed account of his income and expenditure.

Question 3.

How was society divided during the Sultanate period?

Answer:

The society during the Sultanate period was divided into-four main classes. The first or the aristocratic class was the most influential class in the society. This class consisted of the nobility and high officials. They were very rich and lived a luxurious life. The second important group were

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the Ulemas and the Hindu priests who advised the Sultan on how to carry on his administration in accordance with the sacred law. The third category of people or the town dwellers consisted of officials, merchants and artisans who were fairly well-to-do. The common people or the peasantry who formed the bulk of the population were poor and did not have enough to satisfy their needs.

Question 4.

Describe the important developments which took place in the following fields during the Sultanate period (a) Language (b) Music and (c) Dance.

Answer:

(a) Language: Persian was the language of administration and the nobility. Arabic was mostly used by traders from Western Asia. Sanskrit continued to be the language of high learning among the Hindus. The blending of Persian and Hindi, gave birth to a new language, Urdu. The word 'Urdu' means camp. It was the language used in camps by soldiers with different mother-tongues to communicate with each other.

(b) Music: During this time fusion of Perso-Arabic and Indian classical music styles were done and outcome of it was Hindustani Music. New musical instruments like the tabla, sitar and sarangi were also developed during this time. The Persian style of chorus qawwali was also popularized during this timer

(c) Dance: Kathak a dance form, originated during the Delhi Sultanate period. It combines Hindu themes with Persian costumes.

Question 5.

With examples explain how the Turks and the Arabs influenced the architecture of the Sultanate period.

Answer:

The characteristic feature of Sultanate architecture is the extensive use of bricks, arches, domes, beams and balconies. The Turkish monuments were plain. There was liberal use of floral and geometric designs. The use of red sandstone added colour to their buildings. Verses from the Koran were engraved on the walls of some buildings. Some of the important monuments of the Sultanate period are the Qutab Minar complex, the Alai Darwaza, the tomb of Ghiyasuddin Tughlaq, Firoz Shah Kotla, the Tughlaqabad for and the tombs of the Todi kings.

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Ans. Ghazal, a combination of beautiful poetry with melody, is also a contribution of the Sultanate period.

① Learning Outcomes:-
Energy is defined as capacity of doing work.

② Energy expressed in joule (J)
* Calorie (Cal)
* electron volt (eV).

③ forms of energy:

(i) KE - This form of energy is due to motion of an object.

(ii) Potential Energy - This form of energy is due to position of the object.

(iii) Electrical Energy - Energy produced from various power plants.

(iv) Thermal Energy - It is also known as heat energy.

(v) Light Energy - It is a form of energy which makes us to see objects.

(vi) Sound Energy - This form of energy travels from one place to another place in form of waves.

4. (a) Electrical to mechanical
eg - Electric fan.

(b) Electrical to thermal
eg - Electric room heater.

(c) Chemical to electrical
eg - Battery

(d) Sound to electrical, eg - Microphone.

5. It states that energy can neither be created nor destroyed, it can only change its form.
ex - pendulum, electric bulb

Back Exercises - on books. [A, B, C, D, E].

Ex F
20.

Learning outcomes (Ans 1 & 2)

21. Relation between work and energy is known as work energy theorem. It says that change in the energy to motion of an object is equal to the work done by all the forces on the object.

Ex - When a moving ball is hit hard with a bat it covers a long distance. work done by the batsman gives more energy to the ball.

22. Same as Ans - 3 (L.O).

Ex. K.E = bullet fired from a gun.
P.E = hydroelectric stations.
E.E = Tubes, lamps -
T.E = Thermal plants.
L.E = Laser, flood lights.
S.E = Ultrasound.

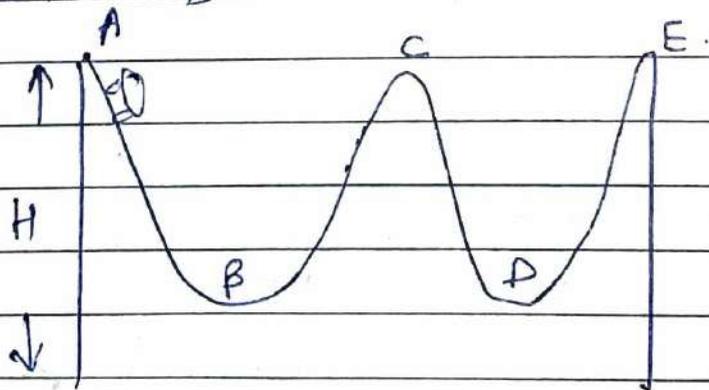
Page No. _____
Date _____

23. Conversion of one form of energy into another form of energy is called transformation of energy.
ex: Electrical to mechanical (Electric fan)
light to heat (Solar Cooker)

24. L.O (Ans - 5)

25. Roller coaster is based upon the principle of conservation of energy.

The slide car at height H will have potential energy. When the slide is released, potential energy change into kinetic energy. This k.E will make the slide pass B and reach another high point C. At this position, slide will again have potential energy which is converted into kinetic energy to pass position D and rise to position E.



26. Height of water in the reservoir is called water height. It gives amount of potential energy stored in it.

When water flows in the pipe under the pull of gravity, P.E of water is changed into K.E. This K.E is passed on to the turbine which starts rotating. Turbine then rotates the shaft of the generator to produce electricity.

Test Check

27. Electrical \rightarrow Mechanical.
 28. Electrical \rightarrow Sound
 29. Chemical \rightarrow Mechanical
 30. Chemical \rightarrow Heat
 31. Chemical \rightarrow heat, light, sound
 32. Electrical \rightarrow Sound
 33. Wind \rightarrow electrical
 34. Potential \rightarrow Kinetic

35. A Reservoir
 B Dam
 C Pipe
 D Generator
 E Turbine
 F Supply wire.

Class-7

CH-4

E. Define

17. Reflection - The returning of light in a medium after striking the surface of some other medium is called reflection.
18. Plane - A flat or fully levelled surface.
19. Angle of reflection - Angle between the normal and the reflected ray made at the point of incidence.
20. Primary colour - The groups of Red Green and Blue colours from which all other colours can be had by mixing are called Primary colours.
21. Secondary colour - Colours obtained after mixing any two primary colours are called Secondary colours.
- F.
- 22.
23. To reflect light on the slides to be viewed.
24. The angle of incidence is always equal to

angle of reflection - i.e, $i = r$.

25. It has a flat, two dimensional surface.

Gr. 26.

25. Size of the image is equal to the size of the object.

Gr.

26. When light strikes a shining surface, it is returned to the same medium from which it started to strike the surface.

27 (i) A driver can see things behind his car through polished reflectors fixed on his vehicle.

(ii) We can see image in a pond having still water.

28. 1. plane - A flat or fully levelled surface.

2. Incident ray - It is the ray of light which strikes a reflecting surface.

3. Normal - It is the perpendicular drawn at the point of incidence.

4. Reflected ray - It is the ray of light which is sent back by the reflecting surface to the same medium from which the incident ray originated.

5. Angle of incidence - Angle between the normal and the incident ray made at the point of incidence.

6. Angle of reflection: Angle between the normal and the reflected ray made at the point of incidence.

29. Two important laws of reflection:-

Let ABCD is a plane perpendicular to the reflecting surface. Incident ray PO

reflected ray OQ

& Normal ON (all lie in same plane)

Fig fig-54 (Reflecting surface)

Law 1 The angle of incidence is always equal to angle of reflection
 $\angle PON = \angle QON$
 $i = r$

Law 2 The incident ray, the reflected ray and the normal, all are in the same plane.

30. A plane mirror has a flat, two dimensional surface that reflects light
 (Reflecting surface of plane mirror)

Uses: 1. It is used as a looking mirror for hair dressing, makeup etc.

2. used in solar cookers, to focus reflected rays of the sunlight on the food.

31. (i) If a ray of light from point P, strikes the point Q (at 90°), this ray will be returned back along same path (from PQ to QP)

(ii) If light strikes at $\angle i < 90^\circ$, it is reflected as per laws of reflection.

32. Ray diagram: It is a drawing of the path taken by light to form an image on object.
Diagrams:

(i) a point object pg- 67. "

(ii) object of limited size pg- 68.

33. (i) The size of the image is formed equal to the size of the object.

(ii) Virtual & erect.

(iii) Behind the mirror.

(iv) Laterally inverted image.

(v) The distance of the image behind the mirror is the same as the distance of an object from the mirror.

34. Speed of light - Speed at which light waves propagate through different materials.

- Speed of light in vacuum is $3 \times 10^8 \text{ ms}^{-1}$.
- It is denoted by - (c)

35. Colours - objects produce different sensations on the eye when they reflect or emit light.

Primary colour - same as (20)
Secondary colour - " " (21)

36. Different objects may interact with light in different ways.

- When sunlight strikes an opaque object, it absorbs some colours which will not reach our eyes.
- While, other colours are reflected back to our eyes.
- This reflected colour of light decides the colour of an object.

38. Rainbow:- A rainbow shows: the visible light has all the seven colours in it. These colours are arranged in a particular fashion in the bow formation.

Explanation: pg 75 [last paragraph - The sunlight splits - - - - to pg 76 These droplet form a circular arc].

Chapter 2

Computer-Internal Hardware

Answers

Exercises

1. Tick the correct answer.

- a. System Unit
- b. Motherboard
- c. CPU
- d. Heat Sink
- e. Hard Disk
- f. RAM
- g. MRAM

2. Write 'T' for True and 'F' for False statements.

- a. T
- b. F
- c. F
- d. T
- e. F
- f. T

3. Fill in the blanks.

- a. Brain
- b. Saving
- c. RAM
- d. BIOS
- e. Track
- f. Ports
- g. Video

5. Who am I?

- a. System Unit
- b. RAM
- c. Secondary Memory
- d. SMPS
- e. Modem Card

6. Answer in 1-2 sentences.

- a. The hardware components that are fitted inside the system unit are internal hardware. Example :- motherboard, drives, power supply etc.
- b. A multi core processor is a chip with many processors to get greater processing performance.
- c. A heat sink is a small ceramic or metal component, with fins on its surface, that absorbs and disperses heat produced by electrical components.
- d. A defragmentation program is used to place all parts of a file in one location.
- e. An adapter card is a circuit board that enhances the functions of a component of computer.
- f. Speed of CPU is measured in cycles per second (hertz or Hz), where a cycle represents a single task performed by the CPU such as adding two numbers, and is usually measured in gigahertz (GHz) or billions of cycles per second.
- g. SMPS stands for Switched Mode Power Supply. Many personal computers plug in standard wall outlets, which supply an alternating current (AC) of 115 to 120 volts. This type of power is unsuitable for use with a computer. SMPS converts the wall outlet AC power to DC.

7. Answer Briefly.

- a. System unit is a box like case that stands near the monitor. It is made of metal or plastic. It protects the internal electronic components from damage. It is also called computer case.

The electronic components and most of the storage devices of a computer reside inside the system unit. Other devices such as keyboards, mouse, printer, speakers etc, normally occupy space outside the system unit.

b. Functions of processor are as follows: -

- (i) The main function of CPU is to control the functions performed by the other components of computer.
- (ii) It is used to process functions, perform calculations and manage most of the operations.
- (iii) It carries out the basic instructions that operate the computer.

Parts of CPU: -

ALU: - The Arithmetic logic Unit (ALU) performs arithmetic, comparison and logical operations.

Control Unit: - It controls all the functions of a computer. It also checks the results given by ALU.

Memory Unit: - It holds the data that needs to be processed as well as the data that has already been processed.

c. Primary Memory

It is often known as the working memory or the main memory of a computer system.

Primary memory is of two types: - volatile and non-volatile. RAM is volatile and ROM is non-volatile in nature.

Secondary Memory

It is used to store data for a long time. It operates at a slower rate than primary memory.

This memory is permanent in nature, ie, data stored is not lost even when the computer is switched off. So it is known as non-volatile Memory.

Example: - Hard Disk, Compact Disk, Pen Drive etc.

d. RAM, also called main memory, consists of memory chips that can be read from and written to by the processor and other devices. RAM is a volatile memory. It loses its contents when the computer is turned off. So, you must save the items you may need in the future.

Types of RAM

- (i) Dynamic RAM (DRAM)
- (ii) Static RAM (SRAM)

(iii) Magnetoresistive RAM (MRAM)

e. ROM refers to memory chips used for storing data that can be read only. The data on ROM chips cannot be modified hence, the name read only memory ROM is non-volatile. Its contents are not lost when the computer is switched off.

The variations of the ROM chips are-

- (i) Programmable Read-only memory (PROM)- It is blank ROM chip on which you can place items permanently.
- (ii) Erasable Programmable ROM (EPROM)- The contents are erased by ultraviolet light and then reprogrammed by a PROM program.
- (iii) Electrically EPROM (EEPROM)- It allows a programmer to erase the microcode with an electric signal.

f. Formatting: It is the process of dividing the disk into tracks and sectors so that the operating system can store and locate data and information on the disk.

Partitions: The hard disk can be divided into separate areas called partitions by issuing a special operating system command. Each partition functions as if it were a separate hard disk drive. Partitioning is often performed to make hard disks more efficient or to allow you to install multiple operating systems on the same hard disk.

Q.8 Application based:

Ans: A Multi core processor.

4. Full Forms

1. CPU- Central Processing Unit
2. ALU- Arithmetic Logic Unit
3. CU- Control Unit
4. MU- Memory Unit
5. Hz- Hertz
6. GHz- Gigahertz
7. MHz- Megahertz
8. B- Byte
9. KB- Kilobyte

10. MB- Megabyte
11. GB- Gigabyte
12. TB- Terabyte
13. PB- Petabyte
14. EB- Exabyte
15. ZB- Zettabyte
16. YB- Yottabyte
17. BB- Brontobyte
18. NVM- Non Volatile Memory
19. RAM- Random Access Memory
20. DRAM- Dynamic Random Access Memory
21. SRAM- Static Random Access Memory
22. SDRAM- Synchronous Dynamic Random Access Memory
23. DDR SDRAM- Double Data Rate Synchronous Dynamic Random Access Memory
24. RDRAM- Rambus Dynamic Random Access Memory
25. MRAM- Magnetoresistive Random Access Memory
26. ROM- Read Only Memory
27. BIOS- Basic Input Output System
28. PROM- Programmable Read Only Memory
29. EPROM- Erasable Programmable Read Only Memory
30. EEPROM- Electrically Erasable Programmable Read Only Memory
31. HDD- Hard Disk Drive
32. SMPS- Switched Mode Power Supply
33. AC- Alternating Current
34. DC- Direct Current

CLASS 7 – (CHAPTER 3)
NUMBER SYSTEM – AN INTRODUCTION

1. Tick the Correct Answer:

- | | |
|---------------|----------------|
| a. On and Off | f. Bit |
| b. 0 and 1 | g. Decimal |
| c. Off | h. Hexadecimal |
| d. Byte | i. 0 to 7 |
| e. Nibble | |

2. True or False:

- | | |
|----------|----------|
| a. False | d. False |
| b. True | e. False |
| c. True | f. True |

3. Blanks:

- a. Positional
- b. 10
- c. Binary
- d. Octal
- e. Hexadecimal
- f. 0 – 9 and A – F
- g. digits
- h. bits and bytes
- i. odd

4. **Short answers:**

- a. The binary number system is a number system that has just two unique digits, 0 and 1, called bits.
- b. Every character in computer like alphabets (A – Z or a – z), numbers (0 – 9), symbols, has an assigned numeric code. This code is known as ASCII (American Standard Code for Information Interchange) code.
- c. There are different positional number systems. These are:
 1. Decimal Number System
 2. Binary Number System
 3. Octal Number System
 4. Hexadecimal Number System
- d. **Bit** - The smallest unit in computer processing is called Bit. It is a unit of data that can be either of the two conditions, 0 or 1.
Byte - A group of 8 bits is called a Byte. 256 bytes are possible and they can represent 256 characters.
Nibble - Half a byte is called Nibble. A nibble is a collection of bits on a 4-bit boundary.

5. **Answer Briefly**

- a. Number system is a way to represent numbers in a computer system. Every value that you are giving to/ getting from computer memory has a defined number system. There are two types of Number Systems.

1. Non – positional Number System

This method of counting uses an additive approach or non – positional number system. In this system, we have symbols such as I for 1, II for 2, III for 3, IIII for 4, IIIII for 5, etc. Each symbol represents the same value regardless of its position in number.

2. Positional Number System

In a positional number system, there are only a few symbols called digits. These symbols represent different values, depending on the position they occupy in a number.

b. Non – positional Number System

This method of counting uses an additive approach or non – positional number system. In this system, we have symbols such as I for 1, II for 2, III for 3, IIII for 4, IIIII for 5, etc. Each symbol represents the same value regardless of its position in number.

Positional Number System

In a positional number system, there are only a few symbols called digits. These symbols represent different values, depending on the position they occupy in a number.

c. Octal Number System

In an octal number system, the base is 8. Hence, there are only eight symbols or digits 0 – 7. The largest single digit is 7. Each position in an octal number represents a power of the base (8).

Hexadecimal Number System

The hexadecimal number system uses 16 digits. These include the symbols 0 – 9 and A – F. It can represent binary values in a more compact and readable form.

d. Decimal Number System

The decimal number system is a base 10 number system. The base of a number system indicates how many symbols it uses. The decimal number system uses 10 symbols: 0 – 9. Each of the symbols in the number system has a value associated with it.

Binary Number System

Binary is a base 2 number system and the symbols it uses are 0 and 1. In binary, the place values, moving from right to left, are successive powers of two.

Ch - 3 Number System
6. Convert the following
a. Decimal to Binary

i. 345

2	345
2	172 - 1
2	86 - 0
2	43 - 0
2	21 - 1
2	10 - 1
2	5 - 0
2	2 - 1
2	1 - 0
	0 - 1

Ans = (101011001)₂

ii. 113

2	113
2	56 - 1
2	28 - 0
2	14 - 0
2	7 - 0
2	3 - 1
2	1 - 1
	0 - 1

Ans = (1110001)₂

iii 145

2	145
2	72 - 1
2	36 - 0
2	18 - 0
2	9 - 0
2	4 - 1
2	2 - 0
2	1 - 0
	0 - 1

Ans ~ (10010001)₂

b. Binary to Decimal

i 111

$$1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$$

$$4 + 2 + 1$$

$$\underline{\underline{7}}$$

ii 1101

$$1 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0$$

$$8 + 4 + 0 + 1$$

$$\underline{\underline{13}}$$

iii 1000
 $1 \times 2^3 + 0 \times 2^2 + 0 \times 2^1 + 0 \times 2^0$
 $8 + 0 + 0 + 0$
8

x. Decimal to Octal

i 45

8	45
8	5 - 5
	0 - 5

Ans = $(55)_8$

ii 70

8	70
8	8 - 6
8	1 - 0
	0 - 1

Ans = $(106)_8$

iii 220

8	220
8	27 - 4
8	3 - 3
	0 - 3

Ans = $(334)_8$

d. Decimal to Hexadecimal

i 22

$$\begin{array}{r|l} 16 & 22 \\ \hline \end{array}$$

$$\begin{array}{r|l} 16 & 1 - 6 \\ \hline \end{array}$$

$$\begin{array}{r|l} & 0 - 1 \\ \hline \end{array}$$

Ans = $(16)_{16}$

ii 330

$$\begin{array}{r|l} 16 & 330 \\ \hline \end{array}$$

$$\begin{array}{r|l} 16 & 2 - 10 \\ \hline \end{array}$$

$$\begin{array}{r|l} & 0 - 2 \\ \hline \end{array}$$

Ans = $(2A)_{16}$

iii 840

$$\begin{array}{r|l} 16 & 840 \\ \hline \end{array}$$

$$\begin{array}{r|l} 16 & 52 - 8 \\ \hline \end{array}$$

$$\begin{array}{r|l} 16 & 3 - 4 \\ \hline \end{array}$$

$$\begin{array}{r|l} & 0 - 3 \\ \hline \end{array}$$

Ans = $(348)_{16}$

CLASS 7 (Chapter 7)

Formatting Worksheet and Adding Simple Formula in MS Excel

I. Tick the correct answer

- a. Formatting
- b. Alignment
- c. 12
- d. Theme Gallery
- e. Cell Reference

II. True/ False

- a. True
- b. False
- c. True
- d. False

III. Fill in the Blanks

- a. Formula
- b. Merge & Center command
- c. Border
- d. Numerical
- e. Special
- f. Percentage
- g. Clear rules

IV. Short Answers

- a. We need a theme gallery to apply a combination of formatting settings and to give a professional look to the spreadsheet.
- b. Gridlines help to differentiate between cells.
- c. It is useful for centering titles over the data.
- d. Changing the color of cells adds background color to the cells. Changing the color of data changes the color of data in the worksheet to draw attention towards important information.
- e. When you move the mouse pointer over themes, you see them previewed in the worksheet. This feature is called live preview.
- f. Every cell in a worksheet has a unique address called cell reference.

g. Auto sum function quickly performs common calculations on numbers in the worksheet.

V. Long Answers

a. Formatting displays the worksheets in an attractive and more legible outlook. You can make the worksheet more presentable by applying one or several of Excel formatting features. The appearance of the worksheet data can be improved by changing the font and size of data, adding colour and shading etc.

b. Number Formats can be used to control the appearance of numerical data.

- Number – General number display with two default decimal points.
- Date – Used to display date values.
- Time – Used to display time values.
- Percentage – Multiplies cell value by 100 and displays percent sign.
- Text – Treats value as text.

c. Conditional formatting feature of Excel allows you to apply different formatting options such as background colour, borders or font formatting to data that meets certain conditions.

Steps: 1. Select the cells or range of cells.

2. Click on Home tab.

3. Click on Conditional Formatting.

4. Click on Highlight Cells Rules.

5. Specify the operator.

6. Enter a value or text for condition.

7. Choose a format and click on OK button.

d. A formula is a sequence of values, cell references, names of functions or operators that produces a new value from existing values. Formulas are used to perform various calculations such as addition, subtraction, division and multiplication. In Excel, Formulas begin with an equal to (=) sign.

Q.6 Application based:

Ans: Conditional Formatting

Shortcut Keys:

- Save a worksheet – Ctrl+S
- Undo the last action – Ctrl+Z
- Redo the last action – Ctrl+Y
- Cut/Move text – Ctrl+X
- Copy text – Ctrl+C
- Paste text - Ctrl+V
- Bold text – Ctrl + B
- Italics text – Ctrl + I
- Underline text – Ctrl + U

Extra Questions:

1) What is alignment?

Answer – Alignment means the way in which data is settled within the boundary of a cell. You can align data in three different ways such as left align, center align and right align to enhance the appearance of your worksheet.

2) Write steps to change Font and Size of data.

Answer –1. Select the cells containing data.
2. Click on “Home” tab.
3. Click on the down arrow button of Font.
4. Click on the font you want to apply.
5. Click on the down arrow button of the Font size.
6. Click on the size you want to apply.

3) How can you add borders to cell?

Answer – You can add borders to your worksheet cells. It will separate the data from surrounding cells.

1. Select the cells.
2. Click on “Home” tab.
3. Click on the down arrow of Borders.
4. Click on any border style.

4) Write steps to remove conditional formatting.

Answer – 1. Select the cells from where you want to remove the conditional formatting.

2. Click on the “Home” tab.
3. Click on “Conditional Formatting”.
4. Choose “Clear Rules”.
5. Click on “Clear Rules from Selected Cells” from the side menu.

5) What is an operator?

Answer – An operator specifies the type of calculation you want to perform.

Example - +, -, *, /, etc.

6) Write steps to perform Autosum.

Answer – 1. Click on the cell below or to the right of the cells containing numbers.

2. Click on “Home” Tab.

3. Click on down arrow button of Autosum.

4. Click on the calculation you want to perform.

5. Click Enter key to perform the calculation.

PERIODIC TEST 1(PAGE 156)

1.b – Main memory

2.a – False

3.b – Hexadecimal

4.a $\frac{2}{325}$

$$\begin{array}{r|l} 2 & 325 \\ \hline & 162 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 81 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 40 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 20 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 10 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 5 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 2 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 1 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 0 - 1 \end{array}$$

Ans – (101000101)₂

b. $\frac{8}{721}$

$$\begin{array}{r|l} 8 & 90 - 1 \end{array}$$

$$\begin{array}{r|l} 8 & 8 - 6 \end{array}$$

$$\begin{array}{r|l} & 1 - 0 \end{array}$$

Ans - (1061)₈

c. $\frac{16}{184}$

$$\begin{array}{r|l} 16 & 11 - 8 \end{array}$$

$$\begin{array}{r|l} & 0 - 11 \rightarrow B \end{array}$$

Ans – (B8)₁₆

5.b – Ans 4 b of Ch – 3

5.c – Memory - It is the basic unit where data and instructions are stored temporarily. Memory usually consists of one or more chips on motherboard. Memory stores instructions waiting to be executed by processor, data needed by those instructions and the results produced after processing the data.

PERIODIC TEST 3 (PAGE 157)

1.a – Alignment

4.a – Ans 5- a of Ch 7

5.a – Ans 4-c of Ch 7

TERM TEST 1 (PAGE 158)

1.a – CPU

1.b – EPROM

1.c – 0 and 1

2.c – False

2.d – True

3.b – 1.5 inches

3.c – Switched Mode Power Supply

3.d – 10

3.e – Octal

5.a (i) $\begin{array}{r|l} 2 & 245 \end{array}$

$$\begin{array}{r|l} 2 & 122 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 61 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 30 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 15 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 7 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 3 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 1 - 1 \end{array}$$

$$\begin{array}{r|l} & 0 - 1 \end{array}$$

Ans – $(11110101)_2$

(ii) $\begin{array}{r|l} 2 & 103 \end{array}$

$$\begin{array}{r|l} 2 & 51 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 25 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 12 - 1 \end{array}$$

$$\begin{array}{r|l} 2 & 6 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 3 - 0 \end{array}$$

$$\begin{array}{r|l} 2 & 1 - 1 \end{array}$$

$$\begin{array}{r|l} & 0 - 1 \end{array}$$

Ans – $(1100111)_2$

5.b (i) 11001

$$1x2^4 + 1x2^3 + 1x2^2 + 1x2^1 + 1x2^0$$

$$16 + 8 + 0 + 0 + 1$$

$$25$$

(ii) 1000001

$$1x2^6 + 0x2^5 + 0x2^4 + 0x2^3 + 0x2^2 + 0x2^1 + 1x2^0$$

$$64 + 0 + 0 + 0 + 0 + 0 + 1$$

65

6.b – Ans 5-a of Ch 3

6.c – Ans 6-d of Ch 2

TERM TEST 2 (PAGE 159)

1.a – Formatting

1.c – Highlighted

2.a – False

3.a – Alignment

5.b – Ans 5-b of Ch 7

First Term Answer key English language class 7

Ch -10 The Verb

Ex-A 1) play, 2) was 3) us

B)1) take 2) go 3) like 4) struggled 5) goes 6) barked 7) land 8) do, shout 9) dictates, 10) relished

Ex -c 1) transitive (the bus) 2) intransitive 3) transitive (the time) 4) intransitive 5) transitive a present (direct)me (indirect)6) intransitive 7) transitive (whistle) 8) intransitive 9) transitive (things,)10) intransitive

D)1)

1. Drank
 2. Brushes
 3. Spoke
 4. I was feeling
 5. Was falling
 6. Moves
 7. Rises
 8. Reached
 9. Will do
 10. Eats
1. E- 1) hung
 2. Lay
 3. Lying
 4. Admitted
 5. Confessed
 6. Raised
 7. Rose
 8. Asked
 9. Flows
 10. Flown

F)

1.) happy

2) bitter

3) well

4) sweet

5) dark

CH-12 ACTIVE/PASSIVE VOICE

Ex-A 1) by2) two

- B) 1) Volleyball is being played by them.
2. The bike was repaired by The mechanic on time.
3. The room was being dusted by us.
4. Books and newspapers are edited by editors.
5. The clothes were put in the cupboard by Nisha.
6. Homework is done by us every day.
7. The match was won by our team.
8. The work will be finished by them in a week.
9. The telephone was invented by Alexander Graham Bell
10. This game will be taught to you by me.
11. The signal was received by the officer from his commander.
12. The burglar was being chased by the people.
13. A century was scored by him.
14. She is loved by everyone.
15. My bike has been sold by me.
16. He was arrested by the police.
17. Check was handed to her by him.
18. English is taught to us by MS paula.
19. He was kept waiting by them.
20. The enemy has been defeated by our army.

Ex-c 1) Parvez did not speak a word.

2) Some boys were helping the old man.

3) A car knocked down the child.

4) the noise frightened the horse

5) spectators filled the stadium.

6)The wind blew down the trees.

7) they took her to the hospital.

8) George stephenson built the first railway engine.

9) the boys work pleased the teacher.

10) Her optimism stuck me.

11) His teachers praised him.

12) The people welcomed the Prime Minister .

13) The noise frightened the cat.

14) Who did this?

- 15) The boy teased the dog.
- 16) The thief has picked my pocket.
- 17) The teacher appointed him monitor.
- 18) Marconi invented the radio.
- 19) The Mayor opened the exhibition.
- 20) The watchman opened the gate.

D)

- a. Were they arrested by the police?
- b. What information was given to you by him?
- c. A dark cloud is seen by us.
- d. Is English liked by you?
- e. Many people were injured by the bomb.

Ch-15 The prepositions

Ex- A. 1) into 2) with 3) on 4) about 5) for 6) beside 7) in

B) 1) with 2) on 3) in 4) into 5) of 6) on 7) between 8) in, within 9) on 10) in

C) 1. He goes to the office on foot.

2. She is married to a rich man.
3. Mumbai is famous for its textiles.
4. Camels are peculiarly adapted to life in the desert.
5. His disability prevents him from driving.
6. He prefers coffee to tea.
7. These computers are cheap enough to be accessible to most people.
8. Beside the ungathered rice he lay.
9. He is at death's door.
10. There is still no cure for the common cold.

D)

1) except 2) in 3) of 4) instead of 5) for

FIRST TERM SYLLABUS

Practical/Experiment No.

Date

Experiment STD: 7th Sub: Hindi

पाठ: 5 वनी का महत्व
पाठ: 7 अदृश्य हाथ
पाठ: 9 अतिथि देवी भव;

व्याकरण:

निबंध: 1. डॉ. ए. पी. जे. अब्दुल कलाम
2. विज्ञान वरदान या अभिशाप

पाठ: 11 काल परिभाषा व भेद वर्णन
पाठ: 8 कारक परिभाषा व भेदों के नाम
पाठ: 24 मुहावरे (11-20)
पाठ: 3 तत्सम-तद्भव पृ. 21 (1-15)
अपठित गद्यांश
पत्र: प्रथम आने पर मित्र की बधाई पत्र।

शब्द	अर्थ
अमूल्य	= जिसका मूल्य न लगाया जा सके
संपदा	= धन
श्वॉस	= साँस
वायुमंडल	= हवा का वह घेरा जो पृथ्वी के चारों तरफ है
उपलब्ध	= प्राप्त
शेष	= बाकी
अस्तित्व	= किसी का विद्यमान होना
रोपना	= लगाना
पूर्वज	= पहले पैदा हुए
धरोहर	= अमानत, धाती
आदिकाल	= आरंभिक काल
आवास	= रहना
हानि	= हानि, नुकसान

SHORT ANS.

- प्र० 1 लेखक ने मानव जीवन का आधार किसे बताया है ?
 उत्तर लेखक ने पेड़-पौधों को मानव जीवन का आधार बताया है।
- प्र० 2 पेड़ों से हमें क्या-क्या मिलता है ?
 उत्तर भोजन, फल, शाक-भाजी और साँस लेने के लिए शुद्ध हवा मिलती है।
- प्र० 3 मनुष्य को आने वाली पीढ़ी के लिए किस धरोहर को बचाकर रखना चाहिए ?
 उत्तर हरे-भरे वन तथा फल देने वाले वृक्ष बचाकर रखने चाहिए।
- प्र० 4 आज के समय में लेखक ने किन स्थानों पर वृक्षारोपण करने का सुझाव दिया है ?
 उत्तर नहरों और सड़कों के किनारे, रेल पटरियों के आसपास और खेतों के पास वृक्षारोपण का सुझाव दिया है।

प्र- पेड़-पौधों के अभाव में सभी जंतु तड़प-तड़प कर वधों पर जाँवेंगे?
 उत्तर- क्योंकि सभी जीव जंतु अपने भोजन के लिए पेड़ पौधों पर निर्भर करते हैं। शुद्ध वायु के अभाव में सभी सांस नहीं ले सकेंगे।

प्र- वन और वृक्ष शुद्ध वायु का संतुलन कैसे बनाए रखते हैं?
 उत्तर- सांस लेने की प्रक्रिया में हम शुद्ध वायु अंदर लेते हैं और अशुद्ध वायु बाहर निकालते हैं। पेड़ पौधे अशुद्ध हवा से अपना भोजन तैयार करके शुद्ध वायु को बाहर निकालते हैं। इस तरह वन वायु का संतुलन बनाए रखते हैं।

प्र- बूढ़े आदमी ने वृक्ष लगाने का क्या कारण बताया?
 उत्तर- बूढ़े आदमी ने कहा कि मेरे पूर्वजों ने जो वृक्ष लगाए थे उसके फल मैंने खाए हैं, जो वृक्ष मैं लगा रहा हूँ उसके फल आने वाली पीढ़ी खाएगी।

प्र- 'हरा सोना' से लेखक का क्या आशय है? इसे आवश्यकता से अधिक लूटने का क्या परिणाम हो सकता है?
 उत्तर- लेखक ने वृक्षों को हरा सोना कहा है। इस जरूरत से अधिक लूटने से हमारा अंत हो जाएगा।

प्र- धरती पर नंदन वन कैसे बनाया जा सकता है?
 उत्तर- अगर भारत का हर एक नागरिक नए नए पेड़ लगाकर उसकी देखभाल करे तो धरती पर नंदन वन बनाया जा सकता है।

अर्ध गृहण संबंधी प्रश्न :-

Pg. 39

- क) वन वर्षा कराने में सहायक होते हैं।
 ख) वर्षा से हमें पीने और सिंचाई के लिए जल उपलब्ध होता है।
 ग) कपास और रेशम कपड़े का कच्चा माल है।
 घ) श्वास लेने के लिए शुद्ध वायु पेड़ों से ही मिलती है।

भाषाज्ञान Pg. 40

1) विलीन शब्द

अशुद्ध	असंतुलन
शाकाहारी	अस्वीकार
अनुपलब्ध	दंड

2

समास विग्रह

वायु का मंडल
गुठ का गान
जीवन की रक्षा
पाप का कर्म
राज का मार्ग

3

उपसर्ग जोड़कर नए शब्द बनाइए।

अ + शुद्ध	=	अशुद्ध
परि + आवरण	=	परिवरण
प्र + दूषण	=	प्रदूषण
अन + आवश्यक	=	अनावश्यक
उप + लब्ध	=	उपलब्ध

4

व्यक्तिवाचक

बरगद
तुलसी
आंवला
पीपल
कपास

जातिवाचक

वन
संसार
पेथे
व्यापारी
उपलब्ध

भाववाचक

वायु
कल्पना
सहायता
कर्तव्य
श्रुत

- 5 क) के लिए
ख) में
ग) से
घ) को
ङ) के

Pg. 41

अतिथि देवी भव

शब्द	अर्थ
आगतुक	आने वाला
नाज	गर्व
परकपठा	चरम सीमा
अकरणीय	जो न किया जा सके
समानांतर	बराबर, साथ साथ चलने वाला
अकस्मात्	अचानक
कामकाजी	काम करने वाला
शंकाकुल	शंका से व्याकुल
समन्वय	मिलना
समुन्नत	विकसित
कृतिमता	बनावट
सदृशिन	दिखावा
मूल	कारण
संलाप	बातचीत
लाचारी	बैबसी
आत्मीय	अपना
उत्कंठा	तीव्र इच्छा
गौण	जो समुख नहीं है
अनुग्रह ही	कृतज्ञ
वैयक्तिक	व्यक्तिगत
खंडित	टूटना
भंग	तोड़ना
निपमित	नियम से
शाश्वत	स्थायी
पुरलुप्त	जिनका आनंद उठाया जा सके
सत्पक्ष	सामने
स्वयंसेवक	स्वयं ही सेवा करने वाला
लाभ	लगने योग्य

प्र० लेखक ने कभी अकेले खाना क्यों नहीं खाया ?
उत्तर क्योंकि हर समय घर में कोई न कोई मेहमान आया होता है।

प्र० लेखक ने 'आजकल के बढ़ते हुए दिखाने के किस साधन की ओर संकेत किया है ?
उत्तर यह कहा जाता है कि 'क्या बताऊँ साहब, खाना खाने की फुसरत नहीं मिलती'।

प्र० लेखक ने प्राचीनकाल में अतिथियों के काम आने का क्या कारण बताया है ?
उत्तर लेखक ने बताया है कि पातापात के साधन इतने सरल नहीं थे।

प्र० कुछ लोगों के बारे में लेखक ने क्या सुना है ?
उत्तर (क) लेखक किससे धबराता है ?
(ख) अतिथिदेव ने पत्र में क्या लिखा ?

LONG ANS.

प्र० लेखक ने अतिथि के लिए दूसरा कौन-सा शब्द गढ़ा है और क्यों ?
उत्तर लेखक ने अतिथि के लिए दूसरा शब्द 'असमय' गढ़ा है क्योंकि अतिथि के आने और जाने का कोई समय नहीं।

प्र० आजकल अतिथि-सत्कार में किन कठिनाइयों का सामना करना पड़ता है ?
उत्तर आजकल अतिथि-सत्कार में जीवन की व्यस्तता, छोटा घर, महँगाई आदि की कठिनाइयों का सामना करना पड़ता है।

प्र० लेखक ने भोजन के मामले में सावधान अतिथि की क्या विशेषता बताई है ?
उत्तर लेखक ने बताया है कि अतिथि को खाने में शुद्ध ची चाहिए चाहे वो घर में है या नहीं इसका उसे कोई लेना-देना नहीं।

अधःग्रहण संबंधी प्रश्न.

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क) लेखक के घर में क्या-क्या परेशानियाँ हैं?
उत्तर पत्नी-बीमार है, नौकर तीन महीने से छुट्टी पर है और महीने का अंतिम सप्ताह है।

ख) लेखक को अतिथि का आना क्यों अच्छा नहीं लगा?
क्योंकि उसे बहुत सारी परेशानियों का सामना करना पड़ता है।

भाषाज्ञान

1) कृपण, कृषक कृपा कृतज्ञ दृष्टि

2. संधि करे: शंकाकुल, समन्वय, पपटित, खाद्वान्न,
उदाहरणार्थ

3.

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अ + तिथि = अतिथि

अ + वक्ष = अक्क्ष

प्र + दर्शन = प्रदर्शन

प्र + चलित = प्रचलित

ला + चारी = लाचारी

ला + जवाब = लाजवाब

उप + योगी = उपयोगी

उप + चार = उपचार

स्वभाव + तः = स्वभावतः

स्वभाव + तः = स्वभावतः

खंड + इत = खंडित

अंक + इत = अंकित

विशेष + ता = विशेषता

समान + ता = समानता

4. वाक्य बनाए

जान खाना = हमें अपनी बात को मनवाने के लिए बड़ों की जान नहीं खानी चाहिए।

लाले पड़ना = पुलिस को देखकर चोर को जान के लाले पड़ गए।

छठे छमासे होना = यातायात के सुधनी की कमी के कारण अतिथि पहले छठे छमासे ही आते थे।

टपक पड़ना = आज कल रमा के दिन ही बुरे चल रहे हैं कि एक के बाद एक मुसीबत उस पर टपक रही हैं।

6. क्रियापद व कृतक लिखिए।

- क) दादा जी राम चरित मानस पढ़ते आ रहे हैं।
 ख) पिता जी परीक्षा की तैयारी के लिए कहते आ रहे हैं।
 ग) हम अपना गृहकार्य करते आ रहे हैं।
 घ) मानसी पहिलियाँ पूछती आ रही हैं।
 इ) सपना आने वालों को पुरस्कार मिलता आ रहा है।

पाठ 7 "अदृश्य हाथ"

SHORT ANS.

प्र¹ अग्नि बंगाल की खाड़ी में किस रूप में उतरती है?
 उत्तर- गौरव और प्रकाश के साथ बंगाल की खाड़ी में उतरती है।

प्र² समुद्री जीवों ने अग्नि से क्या स्रजन किया?
 उत्तर- समुद्री जीवों ने अग्नि से पूछा कि उसे किसने बनाया है और किसने उसे आकार दिया है।

प्र³ अग्नि के सर्जकों की अड़चन कम करने वाली कौन थी?
 उत्तर- अग्नि के सर्जकों की पत्नियों और माताएँ उनकी अड़चन कम करने वाली थी।

प्र⁴ कविता से वे पवित्राँ बुनियादी स्त्री पुरुष के सहयोग की विकास का आधार मानती हैं?
 उत्तर- 1 जब महिलाएँ और पुरुष ही एक साथ
 2 प्रेम और सूक्ष्म-बुद्धि आती एक साथ जगमगाती है
 3 दीप आशा और सर्जन के जन्म लेती हैं पवित्र सशक्त अग्नि।

LONG ANS. दीर्घ उत्तरीय

प्र¹ सारा संसार आश्चर्य से भारत की किस अलविद्य की सन्धासा कर रहा है?
 उत्तर- सारा संसार आश्चर्य से भारत द्वारा अग्नि मिश्रण के निर्माण और उसके सफलतापूर्वक अभ्यास की संशासा कर रहा है।

प्रश्न 2. जिन्हें लक्ष्य पाने की आस थी, उन्होंने अपना सगला कर्तव्य बिपा?
 उत्तर- जिन्हें लक्ष्य पाने की आस थी वे भूख-प्यास और नींद को भुला कर लगातार कठिन मेहनत करते रहे।

प्रश्न 3. तेज चमक सरीखा अजूठा सक्काश दिखाई देने के पीछे कवि कितने मानता है?
 उत्तर- तेज चमक जैसा अजूठा सक्काश दिखाई देने के पीछे कवि प्रेमिका के प्यार, बच्चों के स्नेह, बड़ों की आशीर्ष और पत्नियों की प्रार्थनाओं को मानता है।

प्रश्न 4. अभिन ने अपने जन्म का शोष किन्हें दिया और क्यों?
 उत्तर- अभिन अपने जन्म का शोष अपने सर्जकों की पत्नियों और माताओं को दे रही है। इसका कारण है कि वे अपने पति और पुत्रों के मार्ग की अड़चन नहीं बनी।

1. वर्ण विच्छेद भाषा ज्ञान

- 1) करिश्मा = क + अ + र + इ + श + म + आ
- 2) सूरणा = प + र् + ल + र् + अ + ण + आ
- 3) अर्जित = अ + र + ज् + इ + त + अ
- 4) समृद्धि = स + अ + म् + ऋ + द् + ध् + इ
- 5) सशक्त = स + अ + श + अ + क् + त + अ

2. तीन-तीन पर्यायवाची लिखिए :-

- 1 सागर = जलधि, समुद्र, सिंधु
- 2 विश्व = संसार, दुनिया, जगत
- 3 रात = निशा, रात्रि, रजनी
- 4 माता = अम्बा, जननी, माँ
- 5 महिला = नारी, औरत, स्त्री

3. विलोम शब्द

अतीत - वर्तमान

आशा - निराशा

पवित्र - अपवित्र

सकाशा = अंधकार

साकार = निराकार

उम्मीद = नाउम्मीद

4. अनेक शब्दों के लिए एक शब्द बनाइए।

1. सर्जन करने वाला = सर्जक

2. जिसे अचंभा हो रहा हो = अचंभित

3. विज्ञान को जानने वाला = वैज्ञानिक

जिसका अर्जन किया गया हो = अर्जित

समुद्र में रहने वाला = समुद्री / जलचर

5. कविता से चुनकर विशेषण लिखिए।

संज्ञा विशेषण

समुद्र = गहरा

लहरें = ऊँची

विश्व = अचंभित

करिश्मा = अद्भुत

संज्ञा विशेषण

परिणाम = कठिन

नजर = पारखी

आशाएँ = करोड़ी

सकाशा = अन्धठा

व्याकरण

निबंध; डॉ. ए. पी. जी. अखिलकलाम Pg. 173, 174 [व्याकरण]

विज्ञान वरदान या अभिशाप Pg. 177, 178 [Book]

पत्र; प्रथम आर्न पर मित्र की बधाई पत्र। Pg. 170 पत्र. 12

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तत्सम - तद्भव (1-15)

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पाठ 11. काल की परिभाषा व भेद वर्णन

काल की परिभाषा भेदों व उदाहरण सहित बताए।

क्रिया के वे रूप जिनसे काम के होने के समय का बोध हो उसे काल कहते हैं।

काल के भेद : काल के तीन भेद होते हैं।

1. भूतकाल : क्रिया के जिस रूप से काम के बीते समय में होने का बोध हो उसे भूतकाल कहते हैं।

जैसे : मोहन घर गए था।

बस चली गई।

वर्तमान काल : क्रिया के जिस रूप से काम के चल रहे समय में होने का बोध हो उसे वर्तमान काल कहते हैं।

जैसे ; बस आ गई।

राम खाना खा रहा है।

भविष्यत् काल :- क्रिया के जिस रूप से आने वाले समय का बोध हो उसे भविष्यत् काल कहते हैं।

जैसे :- बस आएगी।

हम कल जाएंगे।

पाठ 8 कारक परिभाषा व भेदों के नाम

परिभाषा :- संज्ञा या सर्वनाम के जिस रूप से उसका संबंध वाक्य की क्रिया से जाना जाए उसे कारक कहते हैं।

उदाहरण :- मुकेश ने किताब पढ़ी।

राधा नाच रही है।

कारक के भेद :- कारक के आठ भेद होते हैं।

1. कर्ता (ने)

2. कर्म (को)

3. करण (से)

4. संप्रदान (के लिए, को)

5. अपादान (से)

6. संबंध (का, के, की)

7. अधिकरण (में, पर)

8. संबोधन (हे, अरे) आदि

शब्द	अर्थ
अदृश्य	— जो दिखाई नहीं देता
आह्वान करना	— बुलाना
अर्जित	— प्राप्त
सराहना	— तारीफ करना
उपलब्धि	— साधित
अचंभित	— हैरान
अग्नि	— भारत की महादूर मि साइल
स्त्रीत	— निकलने का साधन, स्थान
करिश्मा	— चमत्कार
अभियांत्रिकी	— यंत्रों को जानने वाले
तराशते	— आकार देते
गढ़ना	— बनाना
समर्पण	— ट्याग
सौदयोगिकी	— वैज्ञानिक उपकरणों का ज्ञान
अडचन	— बाधा, रुकावट
आशीष	— आशीर्वाद
सदीप्त	— जलते हुए
परिपूर्ण	— भरा हुआ
सृजन	— निर्माण