SUMMATIVE ASSIGNMENT -2 2022-23	
Grade – 8	**Subject- MATHS**

Ch-8 Comparing Quantities

Q.1 MCQ   **(Each carry 1 Mark)**

(1) The ratio of 50 paise to Rs. 1 is
(a) 1 : 2   (b) 2 : 1   (c) 1 : 1   (d) 1 : 5.

(2) The ratio 1 : 4 converted to percentage is
(a) 50%   (b) 25%   (c) 75%   (d) 4%.

(3) Out of 40 students in a class, 25% passed. How many students passed?
(a) 20   (b) 10   (c) 30   (d) 40

(4) Sita has Rs 200 with her. She spent 80% amount she had. How much money is left with her?
(a)Rs 10   (b) Rs 20   (c) Rs 30   (d) Rs 40

(5) meenu purchased a fridge for Rs 10000 and sold it for Rs 8000. Find her loss.
(a) Rs 8000   (b) Rs 10000   (c) Rs 2000   (d) Rs 12000

Q.2 Solve the following.   **(Each carry 1 Mark)**

(1) If 20% of x is 25, then find x.

(2) **The ratio of 10m to 10 km is**

(3) **An item marked at Rs. 840 is sold for Rs. 714. The discount % is**

(4) A person got a 10% increase in his salary. If his salary was Rs. 50000, then the new salary is

(5) Laxmi bought an air cooler for Rs. 3300 including a tax of 10%. The price of the air cooler before VAT was added is:

Q.3 Solve the following.   **(Each carry 2 Marks)**

(1)A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?

(2) If Seema had ₹ 600 left after spending 75% of her money, how much did she have in the beginning?

(3) If 60% of people in a city like a cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.

(4) On Sunday 845 people went to the Zoo. On Monday only 169 people went. What is the per cent decrease in the people visiting the Zoo on Monday?

(5) During a sale, a shop offered a discount of 10% on the marked prices of all the items. What would a customer have to pay for a pair of Jeans marked at ₹ 1450 and two shirts marked at ₹ 850 each?

Q.4 Solve the following.   **(Each carry 3 Marks)**

(1)A milkman sold two of his buffaloes for ₹ 20,000 each. On one he made a gain of 5% and on the other a loss of 10%. Find his overall gain or loss. [Hint: Find CP of each]

(2) Parul borrowed ₹ 26,400 from a Bank to buy a scooter at a rate of 15% per annum compounded yearly. What amount will she pay at the end of 2 years and 4 months to clear the loan? (Hint: Find amount for 2 years with interest is compounded yearly and then find SI on the 2nd)

(3) Vasudevan invested ₹ 60,000 at an interest rate of 12% per annum compounded half yearly. What amount would he get
(i) after 6 months?
(ii) after 1 year?

(4) Maria invested ₹ 8,000 in a business. She would be paid interest at 5% per annum compounded annually. Find
(i) The amount credited against her name at the end of the second year.
(ii) The interest for the third year.

(5) The population of a place increased to 54,000 in 2003 at a rate of 5% per annum.
(i) Find the population in 2001.
(ii) What would be its population in 2005?

Ch -9 Algebraic Expressions and Identities

Q.1 MCQ   **(Each carry 1 Mark)**

(1) The expression x + 3 is in
(a) one variable   (b) two variables   (c) no variable   (d) none of these.

(2) The value of $x^2 + y^2$ when x = 1, y = 2 is

(a) 1   (b)2   (c) 4   (d) 5

(3) Which of the following is a monomial?
(a) $4x^2$ (b) a + 6   (c) a + 6 + c   (d) a + b + c + d.

(4) How many terms are there in the expression $7x^2 + 5x – 5$?
(a) 1   (b) 2   (c) 3   (d) 5

(5) The coefficient in the term -5x is
(a) 5   (b) -5   (c) 1   (d) 2

Q.2 Solve the following. **(Each carry 1 Mark)**

(1) The number of like terms in 9x³, 16x²y, -8x³, 12xy², 6x³ is

(2) The sum of x² – y², y² – z² and z² – x² is

(3) The area of a rectangle whose length and breadth are 9y and 4y² respectively is

(4) (x – y) (x + y) + (y – z) (y + z) + (z – x) (z + x) is equal to

(5) (a – b) ² is equal to

Q.3 Solve the following. **(Each carry 2 Marks)**

(1) find **the product of**
   (i) xy, yz, zx   **(ii)** $a, -a^2, a^3$ **(iii)** $2, 4y, 8y^2, 16y^3$

(2) Add: p (p – q), q (q – r) and r (r -p)

(3) Subtract: 3a (a + b + c) – 2b (a – b + c) from 4c (- a + b + c).

(4) **Multiply the binomials**   (2.5l – 0.5 m) and (2.5l + 0.5m)

(5) Subtract: $4p^2q-3pq+5pq^2-8p+7q-10$ from $18-3p-11q+5pq-2pq^2+5p^2$q

Q.4 Solve the following. **(Each carry 3 Marks)**

(1) Use the identity (x+a) (x+b) =x^2+(a+b) x+ab **to find the following products:**
   (i) (x + 3) (x + 7)   **(ii)** (4x - 5) (4x - 1)

(2) Using identities, evaluate.
   (i) 71^2 (ii) 998^2

(3) Simplify.
   (i) (x^2 - 5) (x + 5) + 25   (ii) (x + y) (x^2 - xy + y^2)

(4) Find the product:
   (i) ($\frac{2}{3}$xy) × (- $\frac{9}{10}x^2y^2$)   (ii) (- $\frac{10}{3}pq^3$)×($\frac{6}{5}p^3$q)

(5) Using $a^2 - b^2$ = (a + b) (a - b), find

   (i) 51^2 - 49^2 (ii) $(1.02)^2$ - $(0.98)^2$

Chp 10 Visualizing Solid Shapes

Q.1 MCQ. (Each carry 1 Mark)

(1) The name of the shape is

(a) sphere   (b) cylinder   (c) cone   (d) triangle.

(2) A cuboid has how many faces?
(a) 2   (b) 4   (c) 6   (d) 3

(3) How many edges does a triangular pyramid have?
(a) 2   (b) 4   (c) 6   (d) 8

(4) The top-view of a cone looks like:
(a) A Circle   (b) A Square   (c) A Rectangle   (d) A Triangle

(5) For a polyhedron, if 'F' stands for number of faces, V stands for number of vertices and E stands for number of edges, then which of the following relationships is named as Euler's formula?
(a) F + V = E + 2   (b) F + E = V + 2   (c) V + E = F + 2   (d) F+ V = E – 2

Q.2 Solve the following. (Each carry 1 Mark)

(1) The top-view of a cone looks like:

(2) If a polyhedron has 6 vertices and 12 edges. What is the number of faces it has ?

(3) How many edges does a cuboid have ?

(4) How many vertices does a cube have ?

(5) How many faces does a pyramid with square base have ?

Q.3 Solve the following. (Each carry 2 Marks)

(1) Can a polyhedron have 10 faces, 20 edges, and 15 vertices?

(2) **Can a polyhedron have for its faces**
(i) 3 triangles?
(ii) a square and four triangles?

(3) Look at the given map of a city.
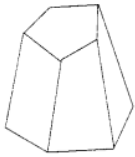**Answer the following.**

 (i) Which is further east, the city park or the market?

(ii) Which is further south, the primary school or the Sr. Secondary School?
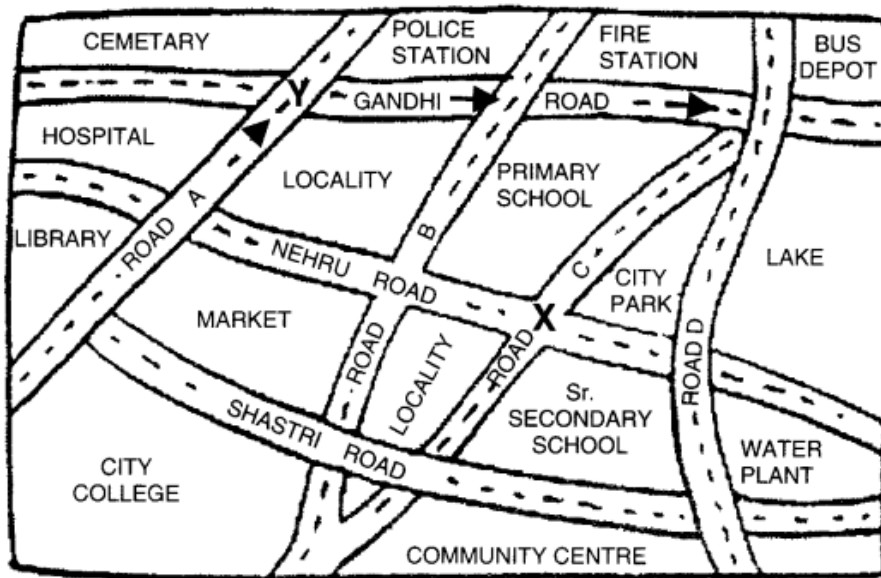
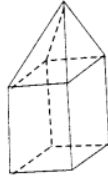**Q.4 Solve the following.** (Each carry 3 Marks)

(1) Verify Euler's formula for these solids

(i) (ii)

(2) Using Euler's formula find the unknown.

	(i)	(ii)	(iii)
Faces	?	5	20
Vertices	6	?	12
Edges	12	9	?

Chp 11   Mensuration

Q.1 MCQ.   **(Each carry 1 Mark)**

(1) The area of a square of side a is
(a)a   (b) a²   (c) 2a   (d) 4a
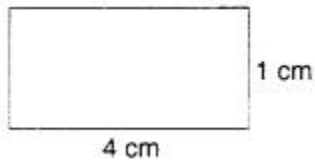
(2) The total surface area of a cylinder of base radius r and height h is
(a) $2\pi r (r + h)$ (b) $\pi r (r + h)$ (c) $2\pi rh$ (d) $2\pi r^2$

(3) 1 L =
(a) 10 cm³   (b) 100 cm³   (c) 1000 cm³   (d) 10000 cm³

(4) The perimeter of the figure is

4 cm

(a) 5 cm   (b) 10 cm   (c) 4 cm   (d) 8 cm

(5) A cuboid has _____ pairs of identical faces.
(a) 2   (b) 3   (c) 4   (d) 5

Q.2 Solve the following.   **(Each carry 1 Mark)**

(1) The volume of a cuboid of length l, breadth b and height h is ?

(2) The area of a rectangle of length a and breadth b is ?

(3) The volume of a room is 80 m³. The area of the floor is 20 m². The height of the room is ?

(4) A cuboid has _____ pairs of identical faces.

(5) If a cuboidal box has height, length and width as 20 cm, 15 cm and 10 cm respectively. Then its total surface area is ?

Q.3 Solve the following.   **(Each carry 2 Marks)**

(1) The diagonals of a rhombus are 7.5 cm and 12 cm. Find its area.

(2) Find the height of a cuboid whose base area is 180 cm^2 and volume is 900 cm^3.

(3) Find the height of the cylinder whose volume is 1.54 m^3 and the diameter of the base is 140 cm.

(4) A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. How many sheets of metal is required?

(5) Find the side of a cube whose surface area is 600 cm^2?

Q.4 Solve the following. (Each carry 3 Marks)

(1) Daniel is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of paint 100 m² of the area is painted. How many cans of paint will she need to paint the room?

(2) A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and length is 1 m.

(3) A milk tank is in the form of a cylinder whose radius is 1.5 m and length is 7 m. Find the quantity of milk in litres that can be stored in the tank.

(4) The area of a trapezium is 34 cm² and the length of one of the parallel sides is 10 cm and its height is 4 cm. Find the length of the other parallel sides.

(5) The floor of a building consists of 3000 tiles which are rhombus shaped and each of its diagonals are 45 cm and 30 cm in length. Find the total cost of polishing the floor, if the cost per m2 is 4

CH-12 Exponents and power

Q.1 MCQ (Each carry 1 Mark)

1. Express 729 as a power of 3.
(a) 3^8 (b) 3^6 (c) 9^3 (d) none of these

2. The value of $(-1)^{55}$ is:
(a) -1 (b) 1 (c) 0 (d) none of these

3. Simplify and write in exponential form of $2^2 \times 2^5$
(a) 2^3 (b) 2^7 (c) 128 (d) none of these

4. Simplify and write in exponential form of $(-4)^{100} \times (-4)^{20}$.
(a) $(-4)^{120}$ (b) $(-4)^{80}$ (c) $(-4)^{2000}$ (d) none of these

5. The exponent in the expression 3^7 is ……………. .
(a) 1 (b) 7 (c) 0 (d) 3

Q.2 Solve the following. (Each carry 1 Mark)

(1) Evaluate: (i) 3^{-2} (ii) $(-4)^{-2}$

(2) $5^3 \times 5^{-1}$ is equal to ?

(3) The value of 2^{-2} is ?

(4) $3^m + 3^{-3} = 3^5 \Rightarrow$ m is equal to ?

(5) a^0 is equal to ?

Q.3 Solve the following. (Each carry 2 Marks)

(1) Find the value of m for which $5^m + 5^{-3} = 5^5$.

(2) Evaluate: **(i)** 3^{-2} **(ii)** -4^{-2}

(3) **Express the following numbers in standard form:**
(i) 0.0000000000085 **(ii)** 31860000000

(4) **Express the following numbers in usual form:**
(i) 3.02×10^{-6} (ii) 5.8×10^{12}

(5) Simplify : $3^{-5} \times 10^{-5} \times 125 \div 5^{-7} \times 6^{-5}$

Q.4 Solve the following.   **(Each carry 3 Marks)**

(1) In a stack there are 5 books each of thickness 20 mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack?

(2**) Express the number appearing in the following statements in standard form:**
(i) 1 micron is equal to 11000000m.
(ii) Charge of an electron is 0.000,000,000,000,000,000,16 coulomb.
(iii) Size of a bacteria is 0.0000005 m

(3) **Simplify and express the result in power notation with positive exponent.**

(i) $(-4^5 \div -4^8)$ (ii) $(3^{-7} \div 3^{-10}) \times 3^{-5}$

(4) Evaluate:

(i) $\left\{ \left(\dfrac{1}{3} \right)^{-1} - \left(\dfrac{1}{4} \right)^{-1} \right\}^{-1}$

(ii) $\left(\dfrac{5}{8} \right)^{-7} \times \left(\dfrac{8}{5} \right)^{-4}$.

(5) Evaluate:
(i) 3−2   **(ii)** −4−2   **(iii)** (12) −5

CH- 13   Direct and Inverse Proportions

Q.1 MCQ   **(Each carry 1 Mark)**

(1) 10 meters of cloth cost Rs 1000. What will 4 meters cost ?
(a) Rs 400   (b) Rs 800   (c) Rs 200   (d) Rs 100

(2) 40 cows can graze a field in 16 days. How many cows will graze the same field in 10 days ?
(a) 60   (b) 64   (c) 80   (d) 75

(3) 10 men can dig a trench in 15 days. How long will 3 men take ?
(a) 50 days   (b) 60 days   (c) 100 days   (d) 75 days.

(4) If x = ky and when y = 4, x = 8 then k =

(a) 1   (b) 2   (c) 3   (d) 4.

(5) If x and y are directly proportional, then which of the following is correct?

(a) x + y = constant   (b) x − y = constant

(c) xy = constant   (d) x/y = constant

Q.2 Solve the following.   **(Each carry 1 Mark)**

(1) If $x \propto y$ and $x_1 = 5$, $y_1 = 210$ and $x_2 = 2$, then find y_2 ?

(2) If 8 men can do a piece of work in 20 days, in how many days could 20 men do the same work ?

(3) A horse eats 18 kg of com in 12 days ? How much does he eat in 9 days ?

(4) A man walks 20 km in 5 hours. How long would he take in walking 32 km ?

(5) 3 lambs finish eating turnips in 8 days. In how many days will 2 lambs finish them ?

Q.3 Solve the following.   **(Each carry 2 Marks)**

(1) Rashmi has a roadmap with a scale of 1 cm representing 18 km. She drives on a T'oad for 72 km. What would be her distance covered in the map?

(2) A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?

(3) If a box of sweets is divided among 24 children, they will get 5 sweets each. How many would each get, if the number of the children is reduced by 4?

(4) Rashmi has a roadmap with a scale of 1 cm representing 18 km. She drives on a T'oad for 72 km. What would be her distance covered in the map?

(5) Following are the car parking charges near a railway station up to

4 hours Rs. 60

8 hours Rs. 100

12 hours Rs. 140

24 hours Rs. 180

Check if the parking charges are in direct proportion to the parking time.

Q.4 Solve the following.   **(Each carry 3 Marks)**

(1) In a model of a ship, the mast is 9 cm high, while the mast of the actual ship is 12 m high. If the length of the ship is 28 m, how long is the model ship?

(2) Suppose 2 kg of sugar contains 9 x 106 crystals. How many sugar crystals are there in

(i) 5 kg of sugar?

(ii) 1.2 kg of sugar ?

(3) A loaded truck travels 14 km. in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?

(4) A farmer has enough food to feed 20 animals in his cattle for 6 days. How long would the food last if there were 10 more animals in his cattle?

(5) A car takes 2 hours to reach a destination by traveling at a speed of 60 km/h. How long will it take when the car travels at the speed of 80 km/h?

CH : 14   Factorization

Q.1 MCQ   **(Each carry 1 Mark)**

(1)The common factor of p3q4 and p4q3 is
(a) p^4q^4 (b) p^4q^3 (c) p^3q^3 (d) p^3q^4

(2) The common factor of 2x, $3x^3$, 4 is
(a) 1   (b) 2   (c) 3   (d) 4

(3) The factorization of 6x + 12y is
(a) 6(x + 2y)   (b) 3(x + 4y)   (c) 2(3x + 12y)   (d) none of these.

(4)The factorization of $28a^3b^5 – 42a^5b^3$ is
(a) $14a^3b^3(2b^2 – 3a^2)$ (b) $14a^2b^3(2b^2 – 3a^2)$ (c) $14a^3b^2(2b^2 – 3a^2)$ (d) none of these.

(5) The factorization of $4y^2 – 12y + 9$ is
(a) $(2y + 3)^2$ (b) $(2y – 3)^2$ (c) $(3y + 2)^2$ (d) $(3y – 2)^2$

Q.2 solve the following   **(Each carry 1 Mark)**

(1) The factorization of (lm + l) + m + 1 is ?

(2) The value of $0.645 \times 0.645 + 2 \times 0.645 \times 0.355 + 0.355 \times 0.355$ is ?

(3) The factorization of $x^2 – 9$ is ?

(4) The factorization of $36x^2y^2 – 1$ is ?

(5) The factorization of $3x^2 + 10x + 8$ is?

Q.3 Solve the following   **(Each carry 2 Marks)**

(1) Factories: (i) $x^2 + xy + 8x + 8y$ (ii) 15xy – 6x + 5y – 2

(2) Find the common factors of the given terms. (i) 2y, 22xy   (ii) 6abc, $24ab^2$, $12a^2b$

(3)) Factories: (i) $49x^2 – 36$ (ii) $(l + m)^2 – (l – m)^2$

(4)Factories   :(1) $28x^4 \div 56x$

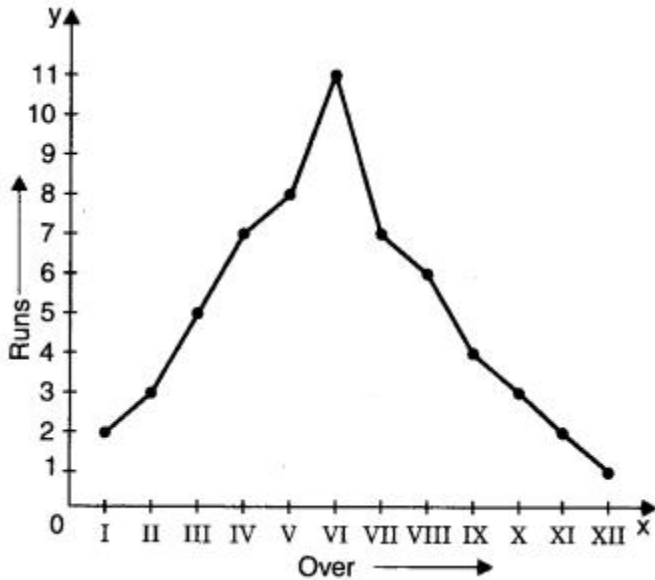**(5)** Divide the given polynomial by the given monomial.
   (1) $(5x^2 – 6x) \div 3x$

Ch-15

(1) Observe the following runs-over graph and answer the related questions:

(1) In which over are the maximum runs scored?
(a) II
(b) IV
(c) V
(d) VI.

(2) In which over are the minimum runs scored?
(a) X
(b) XI
(c) XII
(d) IX.

(3) What is the difference of runs scored in IV and V overs?
(a) 1
(b) 2
(c) 3
(d) 4.

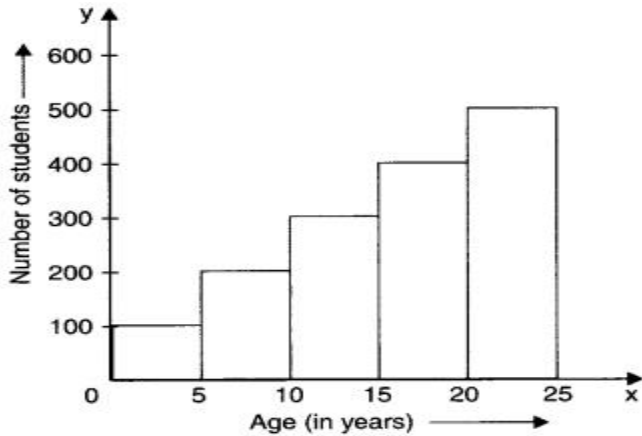(4) What is the sum of runs scored in I and XII overs?
(a) 1
(b) 2
(c) 3
(d) 4.

(5) 3 runs are scored in which overs ?

(a) II and X

(b) I and V

(c) VII and VIII

(d) X and XII

Q.2 **solve the following** (Each carry 1 Mark)

**(1) Observe the following histogram and answer the related questions:**

(1) In which class interval, are the maximum number of students?

(2) In which class interval, are the minimum number of students?

(3) In which class intervals, is the number of students 200?

(4) The difference in the number of students of class intervals 0-5 and 5-10 is

(5) The sum of the number of students in the class intervals 10-15 and 20-25 is

Q.3 **solve the following** (Each carry 2 Mark)

(1) For an experiment in Botany, two different plants, plant A and plant B, were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the

following graph.
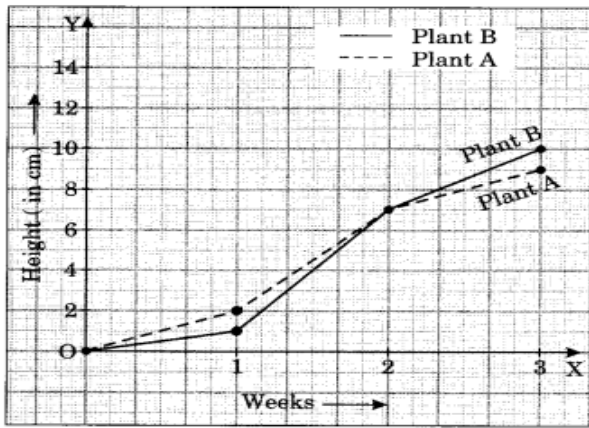
(a) How high was plant A after (i) 2 weeks (ii) 3 weeks
(b) How high was plant B after (i) 2 weeks (ii) 3 weeks
(c) How much did plant A grow during the 3rd week?
(d) How much did plant B grow from the end of the 2nd week to the end of the 3rd week?
(e) During which week did plant A grow most?
(f) During which week did plant B grow least?
(g) Were the two plants of the same height during any week shown here? Specify

(2) The following graph shows the temperature forecast and the actual temperature for each day of a week
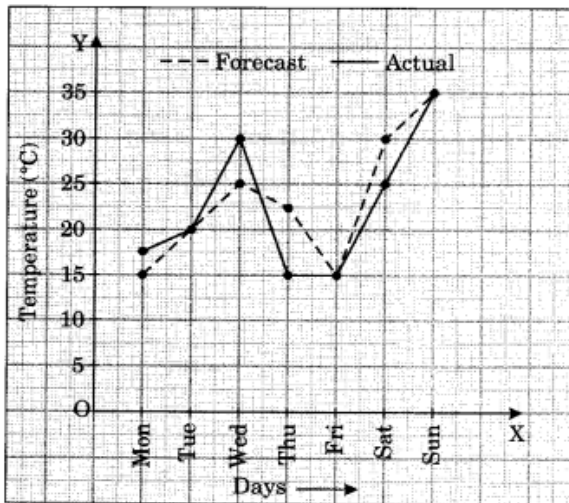
(a) On which days was the forecast temperature the same as the actual temperature?
(b) What was the maximum forecast temperature during the week?
(c) What was the minimum actual temperature during the week?
(d) On which day did the actual temperature differ the most from the forecast temperature?

Q.4 solve the following   **(Each carry 3 Mark)**

(1) Use the tables below to draw linear graphs.
(a)The number of days a hillside city recovered show in different years.

Year	2003	2004	2005	2006
Days	8	10	5	12

(b) Population (in thousands) of men and women in a village is different years.

Year	2003	2004	2005	2006	2007
Number of men	12	12.5	13	13.2	13.5
Number of women	11.3	11.9	13	13.6	12.8

(2)A courier-person cycle from a town to a neighboring suburban area to deliver a parcel to the merchant. His distance from the town at different times is shown by the following graph.
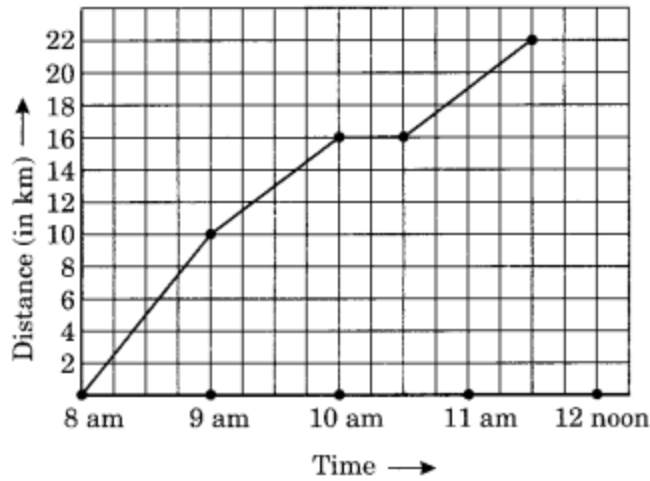
(a) What is the scale taken for the time axis?
(b) How much time did the person take for travel?
(c) How far is the place of the merchant from the town?
(d) Did the person stop on his way? Explain?
(e) During which period did he ride fastest?

Ch-16

Q.1 MCQ   **(each carry 1 marks)**

(1) The generalized form of the number 52 is
(a) $10 \times 5 + 2$
(b) $100 \times 5 + 2$
(c) $10 \times 2 + 5$
(d) 10×5

(2) The generalized form of the number 33 is
(a) $10 \times 3 + 3$
(b) 10×3
(c) $3 + 3$
(d) $3 \times 3 + 3$

(3) The number $10 \times 7 + 5$ in usual form is
(a) 57
(b) 75
(c) 55
(d) 77

(4) The number $10 \times 2 + 7$ in usual form is
(a) 72
(b) 22
(c) 77
(d) 21

(5) The generalized form of the number 123 is

(a) $1 \times 100 + 2 \times 10 + 3$

(b) $2 \times 100 + 3 \times 10 + 1$

(c) $3 \times 100 + 1 \times 10 + 2$

(d) none of these

Q.2 long questions

(1)
```
    A  B
+   3  7
---------
    6  A
---------
```

(2)
```
    A  B
 ×     3
---------
 C  A  B
---------
```

(3)
```
    A  B
 ×     5
---------
 C  A  B
---------
```

(4)
```
    A  1
+   1  B
---------
+   B  0
---------
```

(5)
```
   2  A  B
+  A  B  1
-----------
   B  1  8
-----------
```

(6)

```
    1 2 A
  + 6 A B
  ─────────
    A 0 9
```