CBSE
Class XI Economics

Time: 3 hrs **Max. Marks: 80**

General Instructions:

i. **All** questions are **compulsory**.
ii. Marks for questions are indicated against each question.
iii. Question Nos. **1–4** and **13–14** are very short answer questions carrying **1** mark each. They are required to be answered in one sentence.
iv. Question Nos. **5–6** and **15–18** are short answer questions carrying **3** marks each. Answers to them should normally not exceed **60** words each.
v. Question Nos. **7–9** and **19-20** are also short answer questions carrying **4** marks each. Answers to them should normally not exceed **70** words each.
vi. Question Nos. **10–12** and **21–23** are long answer questions carrying **6** marks each. Answers to them should normally not exceed **100** words each.
vii. Answers should be brief and to the point, and the above word limits should be adhered to as far as possible.

SECTION A: Introductory Microeconomics

1. At the break-even point for a firm: [1]
   a. TR = TC
   b. TR > TC
   c. TR < TC
   d. TR = Zero

2. The demand curve of a firm would be a horizontal straight line under [1]
   a. Perfect competition
   b. Monopoly
   c. Oligopoly
   d. Monopolistic competition

3. Define oligopoly. [1]

4. Why does the Indian government believe in fixing the 'support price' for crops? Give reason. [1]

5. Because of a fall in price of a commodity, the quantity demanded rises by 10%. The price elasticity of demand is given as (−0.5). What is the percentage fall in price of the

commodity? [3]

6. State the differences between fixed costs and variable costs. [3]

7. What is meant by market demand? What is market demand curve? How is it derived from the individual demand curve? [4]

8. With a 10% rise in the price a commodity, the quantity supplied rises from 500 units to 550 units. Calculate the price elasticity of supply. [4]

9. a. What is meant by production possibility curve?
b. What is the slope of PPC? What does it indicate? Why is PPC concave to the origin? [4]

10. With the help of a diagram, explain the impact of the following on the demand for a normal good. [6]
a. Rise in income of the consumer
b. Change in taste and preferences away from the good

11. Explain the following terms: [6]
a. Break-even point
b. Shut-down point

12. Explain the implications of the following features of perfect competition: [6]
a. Large number of buyers and sellers
b. Homogeneous products

SECTION B: Statistics for Economics

13. Statistical data is essential for formulating policies of economic development. Illustrate with an example. [1]

14. If eight workers earn the following income—30, 36, 34, 20, 42, 46, 54, 62, then the arithmetic mean will be [1]
a. 43.2
b. 65
c. 54
d. 72

15. Distinguish between exclusive and inclusive series data. [3]

16. The following table shows the estimates of cost of production of Goods A, B, C and D. Present the data in the form of a sub-divided bar diagram: [3]

Estimate of Cost	Goods			
	A	B	C	D
Raw material	60	45	50	50
Wages	40	40	40	35
Fixed cost	10	12	15	10
Office expenses	10	8	10	5
Total	120	105	115	100

17. In the following frequency distribution, if the arithmetic mean is 42, find the missing frequency. [3]

Salaries (Rs)	5–15	15–25	25–35	35–45	45–55	55–65	65–75
Number of Employees	5	6	7	X	4	3	9

18. Estimate the coefficient of variation of the following data: [3]

Weight (kg)	0–10	10–20	20–30	30–40	40–50
Number of persons	42	20	32	28	8

19. Distinguish between price index and quantity index. [3]

20. Calculate the median, given the following data: [4]

Mid-Value	15	25	35	45	55	65
Male (c.f.)	10	25	44	48	50	52

21. Calculate the mode of the following distribution: [4]

Marks	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54
Number of students	28	84	182	248	261	131	42	9	2

22. Determine the median value of the following series by using the less than ogive graphic method: [6]

Marks	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Number of students	3	5	10	10	26	22	18	4

23. What are the precautions needed to be taken while drafting a questionnaire? Prepare five 'multiple choice' questions relating to a questionnaire for collecting primary data on the level and composition of expenditure of the people in your area. [6]

CBSE
Class XI Economics
Solution

SECTION A: Introductory Microeconomics

Answer 1

The correct answer is (a). Break-even point is said to take place when the firm can cover all the costs. At this point, TR is equal to TC.

Answer 2

The correct answer is (a). Under perfect competition, the demand curve of a firm is a horizontal straight line parallel to the x-axis. This indicates perfectly elastic demand under perfect competition.

Answer 3

Oligopoly refers to a form of market in which there are only few giant firms against a large number of firms. There is a high degree of interdependence among the firms.

Answer 4

The Indian government believes in fixing the 'support price' for crops because the prices of some crops fall below the certain level which is not fair for the farmers to earn their livelihood.

Answer 5

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in demand}}{\text{Percentage change in price}}$$

$$(-0.5) = \frac{10}{\text{Percentage change in price}}$$

$$\text{Percentage change in price} = (-)20\%$$

$\therefore$ Price falls by 20%

Answer 6

Fixed Costs	Variable Costs
Fixed costs refer to the costs which remain constant irrespective of the level of output.	Variable costs refer to the costs which vary with the level of output.
They are never zero; even at zero level of output, fixed costs have to be incurred.	They are zero at zero level of output. They rise with the rise in output and fall with the fall in the level of output.
Example: Costs of plant and machinery	Example: Cost of raw material

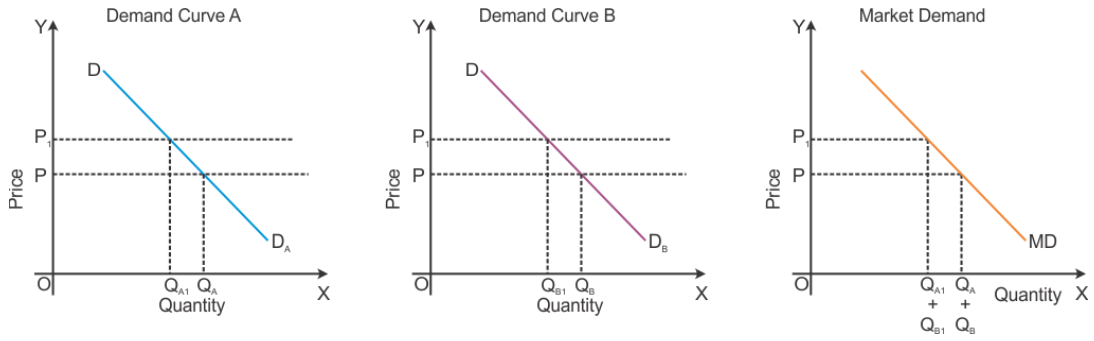
Answer 7

Market demand for a commodity refers to the total demand for the commodity by all the individual consumers in the market.

The market demand curve shows the different total quantities of the commodity which are demanded by all consumers in the market at different prices.

The market demand curve is derived from the individual demand curve by horizontally summing the various individual demand curves.

This can be understood with the help of the following diagram:



Suppose for a commodity in the market, there are two consumers A and B. D_A is the demand curve for consumer A and D_B is the demand curve for consumer B. At P_0 price, the quantity demanded of the commodity by the two consumers is Q_A and Q_B. Accordingly, the market demand and the summation of the individual demand curve is $Q_A + Q_B$. As the price rises to P_1, the individual demand falls to Q_{A1} and Q_{B1}. The market demand is $Q_{A1} + Q_{B1}$. By joining the two points as obtained for the market demand, we get the market demand curve M_D.

Answer 8

$$\text{Price elasticity of supply} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in supply}}$$

Now,

$$\text{Percentage change in quantity supplied} = \frac{550 - 500}{500} \times 100 = 10$$

So,

$$\text{Price elasticity of supply} = \frac{10}{10} = 1$$

Answer 9

a. The production possibility curve refers to the curve which presents the alternative combinations of production possibilities of two goods which can be produced with the given resources and the given technology.

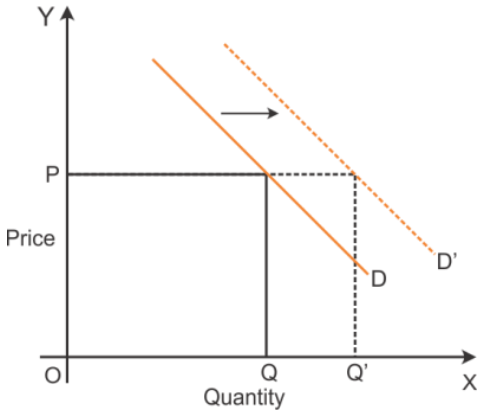
b. The slope of the production possibility curve is the marginal opportunity cost or the marginal rate of transformation. It indicates the units of one good which must be sacrificed for each additional unit of the other good.

The slope of PPC is given by $\frac{\Delta Y}{\Delta X}$.

The PPC is concave to the origin because of a rising marginal rate of transformation, or in other words, the rising slope of PPC. As the number of units produced of one good rises, for each additional unit of the good, greater units of the other good must be sacrificed. In other words, the opportunity cost of producing the good rises. This gives rise to the concave shape of PPC.

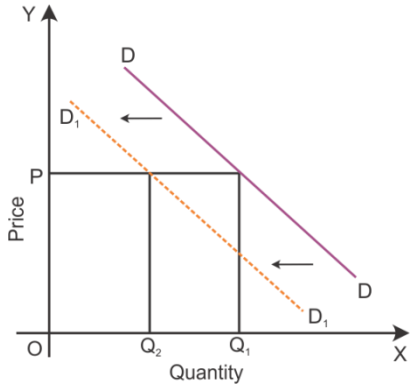
Answer 10

a. Rise in income: With a rise in income of the consumer, the demand for normal good increases. This can be understood with the help of the following diagram:



According to the diagram, DD is the initial demand curve. At OP price, OQ_1 quantity is demanded. If the income of the consumer rises, the demand curve shifts parallelly rightwards to D_1D_1. Here, at the same price, the quantity demanded of the commodity rises to OQ_2.

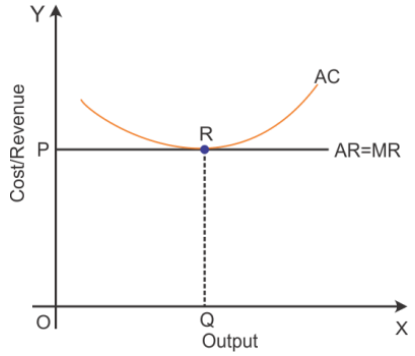
b. ***Change in taste and preferences of consumers away from the commodity***: With change in taste and preferences of consumers away from the commodity, the quantity demanded of the commodity falls. This can be understood with the help of the following diagram:



According to the diagram, DD is the initial demand curve. At OP price, OQ_1 quantity is demanded. If the taste and preferences of the consumer moves away, the demand curve shifts parallelly leftwards to D_1D_1. Here, at the same price, the quantity demanded of the commodity falls to OQ_2.

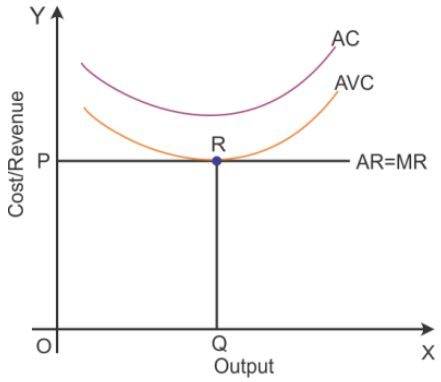
Answer 11

a. ***Break-even point***: A firm is said to be at the break-even point when it is just able to cover all its costs, i.e. when price is equal to average cost.



According to the diagram, the break-even point is at Point R where price (OP) is equal to average cost (OQ).

b. ***Shut-down point***: A firm is said to be at the shut-down point when it is just able to cover only the variable costs. At this point, price is equal to average variable cost. As the firm is not able to cover the fixed cost, it is incurring loss equal to fixed costs. However, the firm will continue production till it can cover the fixed costs.



According to the diagram, the break-even point is at Point R where price (OP) is equal to average variable cost (OQ).

Answer 12

a. ***Large number of buyers and sellers***: Under a perfect competition market, there are a large number of buyers and sellers such that each individual buyer or each individual seller constitutes only a small proportion of the total market. Consequently, no individual firm or individual buyer can influence the price in the market by altering the supply or demand of the commodity. This implies that in a perfect competition market, the price remains constant as determined by the industry. An individual firm is only a price taker.

Implications of the feature:

i. Firms remain a price taker.
ii. Firms face a perfectly elastic demand curve.

b. ***Homogeneous products***: Under perfect competition, the products sold by firms are completely homogeneous. In other words, they are exactly identical to each other in terms of size, shape and colour. Accordingly, the products of various firms are perfect substitutes of each other. Also, there is no need for any kind of selling costs or advertising costs.

The presence of homogeneous products has the following implications:

i. No single firm can control the market prices. There prevails uniform market price.
ii. There is absolutely zero product differentiation.
iii. Because of homogeneity of products, the market price which prevails is the minimum possible.

SECTION B: Statistics for Economics

Answer 13

If the government wants to formulate or modify labour laws, then the government will require ***statistical data*** on working conditions, number of working hours and minimum wages received by workers.

Answer 14

The correct answer is **(c)**.

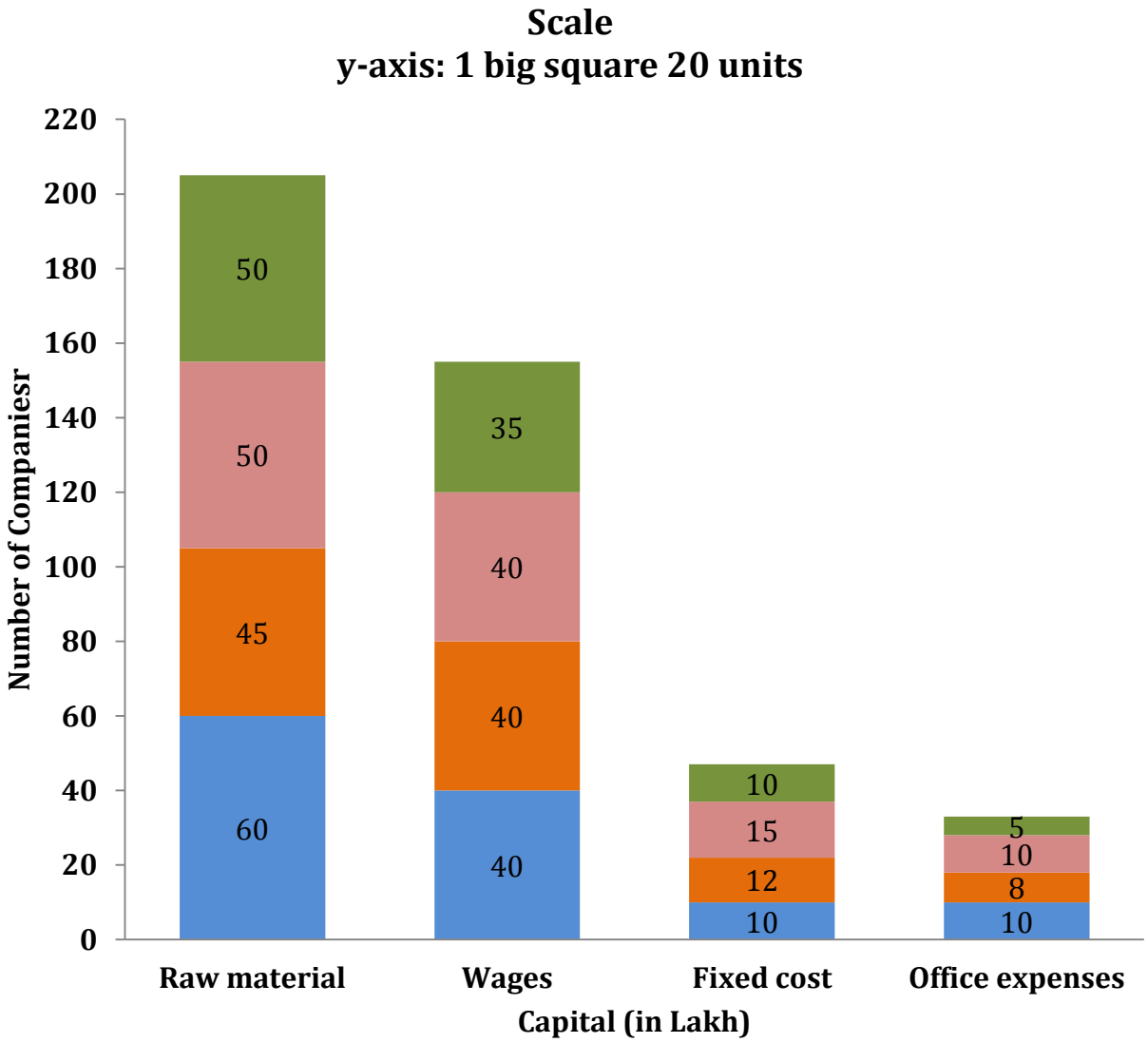
$$\text{Arithmetic Mean } (\bar{X}) = \frac{\sum X}{N} = \frac{324}{8} = 40.5$$

$$\therefore \quad \boxed{\bar{X} = 40.5}$$

Answer 15

Exclusive Series	Inclusive Series
A series in which every class interval excludes the item pertaining to its upper limit is called exclusive series.	A series which includes all the items up to its upper limit is called inclusive series.
The upper limit of one class interval is the lower limit of the next class.	The upper limit of class interval does not repeat itself as a lower limit of the next class interval.
There is an overlapping of the class limits.	There is no such overlapping of the class limits.
Example: In a class interval 20–25, it includes only the item of the value which lies between 20 and 24. Any item of the value of 25 will be included in the next class interval.	Example: In a class interval 20–25, all the items ranging between 20 and 25 are included in that class interval.

Answer 16



Answer 17

Salaries (X)	m	f	fm
$5-15$	10	5	50
$15-25$	20	6	120
$25-35$	30	7	210
$35-45$	40	x	40
$45-55$	50	4	200
$55-65$	60	3	180
$65-75$	70	9	630
		$\sum f = 34 + x$	$\sum fm = 1430 + 40x$

$$\bar{X} = \frac{\sum fm}{\sum f}$$

$$42 = \frac{1430 + 40x}{34 + x}$$

$$1428 + 42\,x = 1430 + 40\,x$$

$$2\,x = 2$$

$$\therefore \boxed{x = 1}$$

Thus, missing frequency is 1.

Answer 18

Weight	m	f	fm	$x=X-\bar{X}$	x^2	fx^2
0-10	10	42	420	-12	144	6048
10-20	15	20	300	-7	49	980
20-30	25	32	800	3	9	288
30-40	35	28	980	13	169	4732
40-50	45	8	360	23	529	4232
		$\sum f=130$	$\sum fm=2860$			$\sum fx^2=16280$

$$\bar{X}=\frac{\sum fm}{\sum f}=\frac{2860}{130}$$

$$\therefore \boxed{\bar{X}=22}$$

$$\text{StandardDeviation}\,(\sigma)=\sqrt{\frac{\sum fx^2}{\sum f}}=\sqrt{\frac{16280}{130}}$$

$$\therefore \boxed{\text{Standard deviation}\,(\sigma)=11.19}$$

$$\text{Coefficient of Variation} = \frac{\sigma}{\bar{X}}\times 100=\frac{11.19}{22}\times 100$$

$$\therefore \boxed{\text{Coefficient of Variation} = 50.86}$$

Answer 19

Price Index	Quantity Index
i. It measures general changes in prices between the current year and the base year.	i. It measures the average change in quantities and assists to compare changes in the physical quantity of commodities produced and consumed.
ii. Two methods to calculate Price Index Number are • Simple aggregative method • Simple average of price relative method	ii. Two methods to calculate Quantity Index Number are • Weighted average of price relative method • Weighted aggregative method
iii. It is also known as unweighted index number.	iii. It is also known as weighted index number.
iv. It considers the prices of the commodity of both base year and current year.	iv. It considers the weights of commodity assigned according to the quantity.

Answer 20

Lower limits and upper limits of class intervals are calculated using the following formula:

Lower limit $(l_1) = m - \frac{1}{2}i$

Upper limit $(l_2) = m + \frac{1}{2}i$

where m is the mid-value and i is the difference between mid-values.

Mid value	Class Interval	Cumulative Frequency (c.f.)	Frequency (f)
15	10 – 20	10	10
25	20 – 30	25	25 – 10 = 15
35	30 – 40	44	44 – 25 = 19
45	40 – 50	48	48 – 44 = 4
55	50 – 60	50	50 – 48 = 2
65	60 – 70	52	52 – 50 = 2
			$N = \sum f = 52$

Median =size of $\left(\frac{52}{2}\right)^{th}$ item

Median = size of 26^{th}item

26^{th} item lies in cumulative frequency 44 which corresponds to the class interval 30-40.
Thus, median class is 30-40.

$$\text{Median} = l_1 + \frac{\frac{N}{2} - \text{c.f.}}{f} \times i$$

$$\text{Median} = 30 + \frac{26 - 25}{19} \times 10$$

$\therefore \boxed{\text{Median} = 30.52}$

Answer 21

As the given data comprises inclusive class intervals, let us convert it to exclusive class intervals as follows:

Class Interval	Exclusive Class Interval	Frequency (f)
10 – 14	9.5 – 14.5	28
15 – 19	14.5 – 19.5	84
20 – 24	19.5 – 24.5	182
24 – 29	24.5 – 29.5	248
30 – 34	29.5 – 34.5	261
35 – 39	34.5 – 39.5	131
40 – 44	39.5 – 44.5	42
45 – 49	44.5 – 49.5	9
50 – 54	49.5 – 54.5	2

Modal class is (29.5-34.5) as it has the highest frequency of 261.

$$\text{Mode } (Z) = l_1 + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times i$$

$$Z = 29.5 + \frac{261 - 248}{2(261) - 248 - 131} \times 10$$

$$Z = 29.5 + \frac{130}{143}$$

$\therefore \boxed{Z = 30.40}$

Answer 22

Estimation of the median using the less than ogive approach

Step 1: Let us convert the series to a less than cumulative frequency distribution as follows:

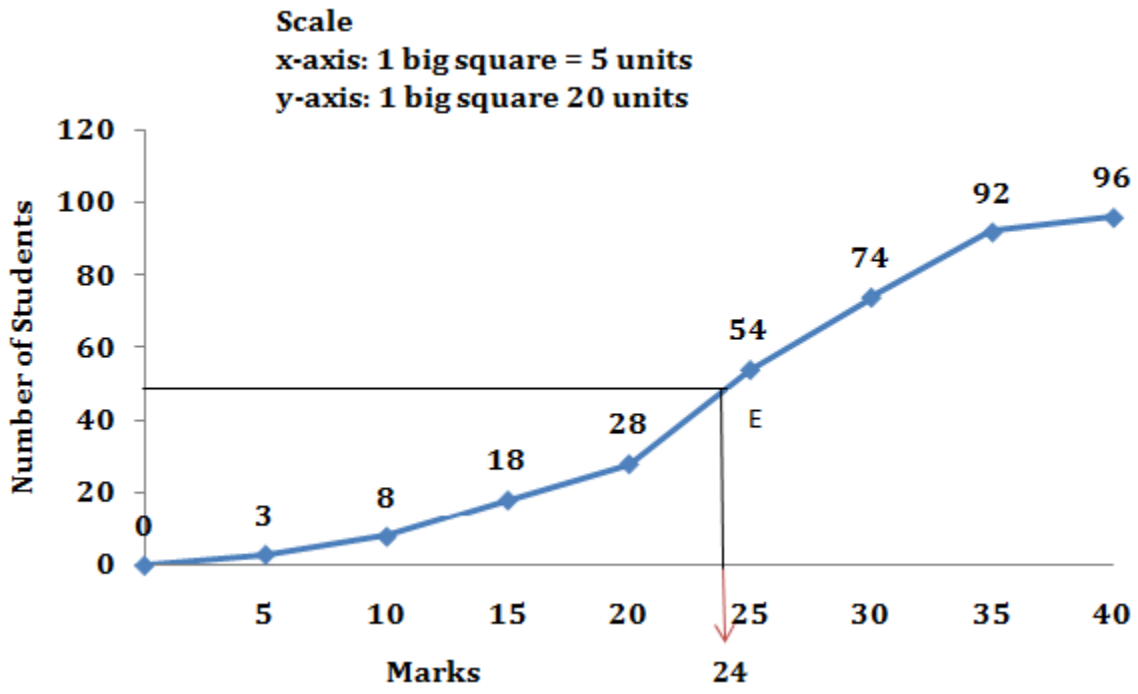
Marks	Cumulative Frequency (c.f.)
Less than 5	3
Less than 10	5 + 3 = 8
Less than 15	10 + 8 = 18
Less than 20	10 + 18 = 28
Less than 25	26 + 28 = 54
Less than 30	20 + 54 = 74
Less than 35	18 + 74 = 92
Less than 40	4 + 92 = 96

Step 2:

Median =size of $\left(\frac{N}{2}\right)^{th}$ item will be marked on Y-axis.

Median =size of $\left(\frac{96}{2}\right)^{th}$ item = 48

Step 3:



Draw a perpendicular line from 48 to the right to cut the cumulative frequency curve at Point E, and from the same point, draw a perpendicular on the x-axis to show the median value of the series. Thus, the point at which it touches the x-axis is the median value (24) of the series.

Answer 23

A questionnaire contains several questions relevant to the field of investigation. The construction of a questionnaire is an art which requires a great deal of skill and practice. While drafting a questionnaire, the following precautions need to be taken:

i. The questionnaire should not be too long.
ii. The questions should be more specific to the inquiry of the study and the number of questions should be as minimum as possible.
iii. Language of the questions should be simple and clear but not complex. It should enable the respondent to understand and answer the question quickly.
iv. Personal, irrelevant and controversial questions must be ignored. It should not offend informants.
v. A questionnaire should have appropriate instructions for the respondent to fill the form.
vi. Questions should not use double negatives such as 'wouldn't you not'.

The objective of the questionnaire is to understand the level and composition of expenditure of the people in a particular area.

QUESTIONNAIRE
on
Level and Composition of Expenditure of People
Multiple Choice Questions

Name: _____
Age: _____
Address: _____

1. What percentage of your income do you spend on purchasing goods and services?
    a) 10–30%
    b) 30–50%
    c) 50–70%
    d) 70–100%

2. What percentage do you save from your monthly income?
    a) 0–10%
    b) 10–20%
    c) 20–30%
    d) 30% and above

3. How many times in a month do you go for an outing?
    a) Never
    b) Once
    c) Twice
    d) Thrice and above

4. Which of the items account for maximum monthly expenditure?
    a) Food
    b) Clothing
    c) Rent
    d) School fees
    e) Others (specify) _____

5. How much do you spend on luxury items?
    a) 0–10%
    b) 10–20%
    c) 20–30%
    d) 30% and above