B K BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
MID-TERM EXAM (2024-25)
ECONOMICS (030)

ANSWER KEY

CLASS: XI	**TIME: 3 hrs**
DATE: 14/09/2024	**MAX. MARKS:80**

1. (b) Both the statement are false 1)
2. (a) Both Assertion(A) and Reason (R) are True and Reason(R) is the correct explanation of Assertion(A) 1)
3. (a) Verifiable 1)
4. (B) Positive 1)
5. (d) Less than unitary elastic 1)
6. (d) All of these 1)
7. (b) zero 1)
8. d) All of these 1)
9. (a) AC = MC 1)
10. (b) TVC 1)
11. (a)Explicit cost 1)
12. (b) AD 1)
13. (d)) Zero 1)

14. An extension of demand can be seen as a movement along the demand curve. 3)
This movement would be caused by a change in the price of the product in question.
An increase in demand can be seen as a rightward shift of the demand curve. This shift can be caused by a number of factors.
An increase in demand happens when more is purchased at the same price and the same quantity is purchased at a higher price.

<div align="center">OR</div>

An individual demand curve is created by plotting the quantity of an item a person would buy at certain price levels, according to the demand schedule. A market demand curve is the sum of all individual demand curves and is created by plotting the total quantity demanded in a market at various price levels.

Price of commodity 'x' (₹)	Quantity demanded of commodity 'x' (in kgs)
10	1
8	2
6	3
4	4
2	5

Price of commodity 'x'(₹)	Quantity of 'x' demanded Kgs.			Market demand A + B + C
	Con-sumer A	Con-sumer B	Con-sumer C	
10	5	10	15	30
8	10	15	20	45
6	15	20	25	60
4	20	25	30	75
2	25	30	35	90

15. Effect of change in own price: Assume that other things remaining constant, if the price 4)
of a good increase, there will be a decrease in the quantity demanded and vice versa. So, there is a negative relationship between the price of a good and its quantity demanded.

An increase in the price of substitute goods leads to an increase in the demand for given commodity and vice versa. Eg. if price of a substitute good say coffee increases then demand for given commodity say tea will rise as tea will become relatively cheaper in comparison to coffee.

16. True and False 4)

(a) False - Reason: Explanation: The cotton textile industry can be considered a microeconomic study because it focuses on the individual decisions and behaviours of firms and households within the industry.

(b) False – Reason: Central problems are found in all economies (both developed and developing economies) as every economy faces problem of scarcity of resources.

(c)True: Economy can never operate outside PPC with the given resources and technology as all points outside PPC are unattainable.

(d) True – Reason: Economic problem arises due to scarcity of resources. However, if there is no scarcity, then there would be no economic problem. This is because scarcity is the root cause of economic problem.
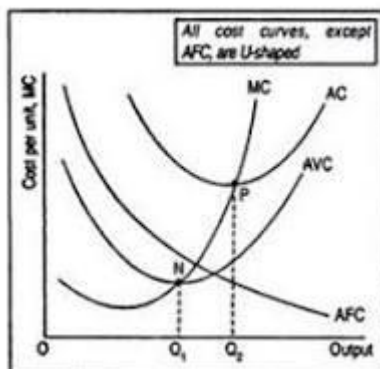
17. 4)
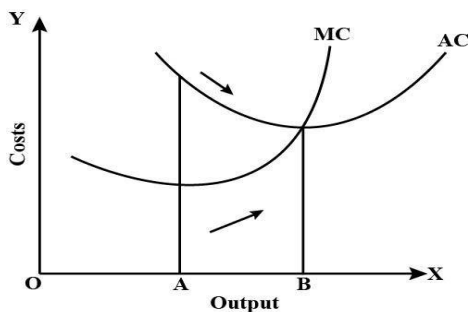
The relationship between MC and AC is as follows :

(i) When MC < AC, then AC falls.

(ii) When MC = AC, then AC is constant (or minimum).

(iii) When MC > AC, then AC rises.

(iv) MC curve always intersects AC curve at its minimum point.

<div align="center">OR</div>

Why AVC and AC are U- shaped?

In short run, Average Cost Curves are of U - shape. It means, in the beginning it falls and after reaching the minimum point it starts rising upward. It gets U - shape due to the following reason:

<u>On the Basis of the Law of Variable Proportions</u> : In the beginning with increase in output, average cost falls because of the operation of the law of increasing returns. After reaching the minimum point, when we increase the output, average cost starts increasing because of the operation of the law of diminishing returns. Thus due to the law of variable proportions, the AC & AVC curve takes U -shape.

18. Law of variable proportions states that when total output or production of a commodity **4)**
is increased by adding units of a variable input while the quantities of other inputs are held
constant then MP of the variable factor initially rises and then falls after reaching a certain
level of employment of the variable factor.
Causes are as follows:

i MP rises: Because when the variable input is increased efficient utilization of the fixed inputs
takes place due to specialization. This raises efficiency of the variable input.

ii MP falls but is positive: Because beyond a point increasing variable inputs puts Pressure on
fixed inputs leading to decline in efficiency.

iii MP continues to fall and is negative: Because there are so much pressures of the variable
input on the fixed inputs that total product starts declining.

19. (A)
i. Form of market - Monopolistic competition **1)**
ii. A firm under perfect competition is a price taker. It cannot influence/change the market price,
implying a constant AR for a firm corresponding to all levels of output. As AR is equal to MR, it
will be horizontal as well. **3)**
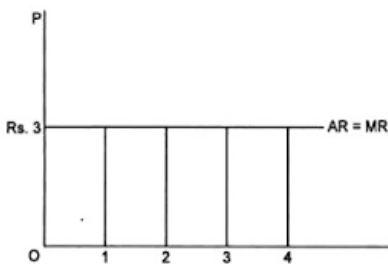
Fig. 7 : Horizontal AR curve & MR curve

Table 5

Units	TR	AR	MR
1	5	5	5
2	10	5	5
3	15	5	5
4	20	5	5
5	25	5	5

(B) **2)**
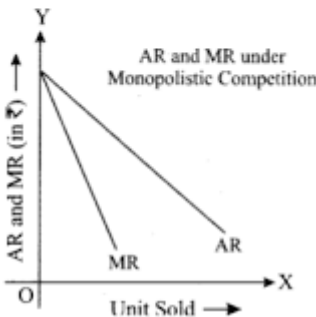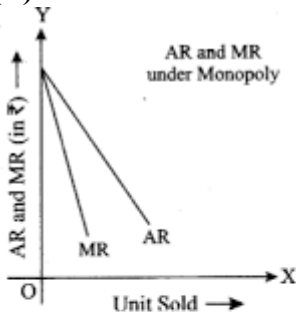
20. (A) Arrange the following coefficients of elasticity of demand in ascending order: **1)**
-0.53, -0.80, -0.87, -3.1

(B)   **3)**

Initial Demand (Q)	=	80 units	Rise in Price (ΔP)	=	₹ 10
Fall in Demand (ΔQ)	=	4 units	Original Price (P)	=	?
New Demand (Q_1)	=	76 units	Elasticity of Demand (E_d)	=	1.5

Price Elasticity of demand (E_d) $= \dfrac{\Delta Q}{\Delta P} \times \dfrac{P}{Q}$

$1.5 = \dfrac{4}{10} \times \dfrac{P}{80} \Rightarrow P = ₹\,300$

Price Before Change in Demand (Original Price) = ₹ 300

(C) A decrease in the price of complementary goods leads to a increase in the demand for **2)**
given commodity and vice versa. For example if price of a complementary good (say petrol)
decreases, then demand for given commodity (say car) will rise.

<div align="center">OR</div>

(A) It is true as it is the income of a consumer which determines whether the good is **2)**
inferior or normal. A good which is a normal good for the consumer having lower income, may
become an inferior good for the consumer having higher income.

(B) Giffen Goods was conceptualised and presented by Sir Robert Giffen. Godrej goods are **2)**
products that are substandard or inferior goods when compared to luxury products. In any
case,the remarkable feature of Giffen goods is that as the cost increases, the quantity demanded will
also increase. Also, this component is the thing that makes it an exemption for the law of interest.

(C) The income effect, in microeconomics, is the resultant change in demand for a good or **2)**
service caused by an increase or decrease in a consumer's purchasing power or real income. As
one's income grows, the income effect predicts that people will begin to demand more (and vice-
versa).

21. (A) **3)**
Positive economics describes and explains various economic phenomena in verifiable terms.
Normative economics focuses on the value of economic fairness, or what the economy "should be"
or "ought to be." While positive economics is based on facts, normative economics is based on
value judgments.

(B) The marginal rate of transformation (MRT) is the number of units or amount of a good **3)**
that must be forgone to create or attain one unit of another good. It is the number of units of good
Y that will be foregone to produce an extra unit of good X while keeping the factors of production
and technology constant.

Combinations	Commodity x	Commodity y	MRT
A	21	1	-
B	19	2	2x:1y
C	16	3	3x:1y
D	12	4	4x:1y
E	7	5	5x:1y
F	1	6	6x:1y

SECTION – B (STATISTICS)

22. Assertion (A) : Scarcity is the root cause of all economic problems. 1)
   Reason (R) : Alternative uses of resources give rise to economical problem.
a) Both A and R are true and R is the correct explanation of A.

23. Statement 1: All numerical statements are statistics. 1)
   Statistics 2: Statistics refers to quantitative information capable of some meaningful conclusions.
d) Statement 2 is true, 1 is false.

24. b) A young lady was run over by a speeding truck at 100 km. per hour. 1)

25. If the value of Mode is 35 and the value of Median is 25, what is the value of Arithmetic 1)
   (a) 20

26. The sum of the deviations of the items from the arithmetic mean is always_____. 1)
   (b) 0

27. Statement 1: Sum of deviations of items from median is always equal to zero 1)
   Statistics 2: Arithmetic mean is not affected by extreme values
   b) Both statements are false.

28. Assertion (A): The measure of central tendency does not represent the entire data. 1)
Reason (R): Measures of central tendency are used to summarise the data.
   d) A is false. R is true.

29. Statistics are used in economic planning for the following purposes 3)
(i) Statistical data help us in comparing the rate of development of one country with the rate of development of the other country.
(ii) The importance of consumption, production, distribution etc can be known from the available statistical data.
(iii) The success that a plan achieves is measured best by the use of statistical methods.
(iv) Statistical data are used for knowing about the progress in the techniques of production, volume of productions imports, exports, etc.
(v) Planning involves fixation of targets and priorities. Targets which are fixed, have to be achieved within a specific period of time.

30. $\bar{X} = A + \dfrac{\Sigma fd}{\Sigma f}$ $= 10 + [\dfrac{-20}{20}]$ $= 10 - 1 = 9$ 3)
   Ans: 9

<div align="center">OR</div>

   N = 26   **M = $\dfrac{N}{2}$** $\dfrac{26}{2}$ **th item = Size of 13th item which lies in group 30-40**
Median class 30-40

M = L$_1$ + $\dfrac{\frac{N}{2} - c.f}{f}$ x i   **= 30 + $\dfrac{13-9}{7}$ x 10**   **30 + $\dfrac{40}{7}$**   **30 + 5.71 = 35.71**
Answer + 35.71

31. Corrected Mean = $\dfrac{\sum X \text{ Wrong} + \text{Correct Value} - \text{Incorrect Value}}{N}$ 3)

$\bar{X} = \dfrac{\sum X}{N}$ = $27 = \dfrac{\sum X}{75}$ $27 \times 75 = 2025 = EX \text{ wrong}$

$\dfrac{2025 + 53 - 43}{75} = \dfrac{2035}{75} = \underline{27.1}$

Wrong value=43,   Correct value= 53

27.13 = ANSWER

32.   4)

Table 1 : Grouping table

Size (X)	Frequency (f) Column I (f)	In two's		In two's	In three's		
		Column II (1 + 2)	Column III (2 + 3)		Column IV (1 + 2 + 3)	Column V (2 + 3 + 4)	Column VI (3 + 4 + 5)
80	3	} 3 + 6 = 9			} 3 + 6 + 8 = 17		
90	6		} 6 + 8 = 14				
100	8	} 8 + 7 = 15				} 6 + 8 + 7 = 21	
110	7		} 7 + 9 = 16		} 7 + 9 + 8 = 24		} 8 + 7 + 9 = 24
120	9	} 9 + 8 = 17					
130	8		} 8 + 9 = 17			} 9 + 8 + 9 = 26	
140	9	} 9 + 4 = 13					} 8 + 9 + 4 = 21
150	4						

Table 2 : Analysis Table

Column No.	80	90	100	110	120	130	140	150
I					✓		✓	
II					✓	✓		
III						✓	✓	
IV			✓	✓	✓			
V				✓	✓	✓	✓	
VI			✓	✓	✓			
Total	–	–	1	2	5	4	3	–

Since the value 120 has occurred for the maximum number of times, i.e., for 5 times, therefor mode (Z) = 120

So, **mode = 120**

OR

$\bar{X} = A + \dfrac{\sum fd'}{\sum f} \times C$ $100 + \dfrac{245}{150} \times 10 = 100 + 16.33 = 116.33$

Answer = 116.33

33. Features of statistics   4)

Characteristics of Statistical Data

(a) Statistics are aggregate of facts

(b) Statistics must be numerically expressed.

(c) Statistics are collected for a pre-defined purpose

(d) Statistics should be collected in a systematic manner.

(e) Statistics are placed in relation to each other

34. Direct Method: $\bar{X} = \dfrac{\sum fm}{\sum f}$ $\quad \dfrac{1530}{60} = 25.5$ $\hspace{3cm}$ 6)

Short cut method : $A + \dfrac{\sum fd}{\sum f}$ $\quad 25 + \dfrac{30}{60} = 25.5$

Step deviation method: $A + \dfrac{\sum fd\prime}{\sum f}$ X C $\quad 25 + \dfrac{3}{60}$ X 10 = 25.5

<div align="center">OR</div>

(i) Mode $= l_1 + \dfrac{f1 - fo}{2f1 - f0 - f2}$ X I $\quad = 29.5 + \dfrac{9 - 5}{2x9 - 5 - 3}$ X 10 $\hspace{2cm}$ 3 + 3

$\quad = 29.5 + \dfrac{4}{10}$ x 10 $\quad = 33.5$ **Answer**

(ii) Median = M = $L_1 + \dfrac{\dfrac{N}{2} - c.f}{f}$ x i $\quad = 150 + \dfrac{195 - 151}{116}$ x 10

$\quad = 150 + \dfrac{44}{116}$ x 10

$\quad = 150 + 3.79 = 153.79 =$ **Answer**

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