Note: -

1. All questions are compulsory.   2. Figures to the right indicate full marks.

3. Students will be allowed 15 Minutes extra time per hour.

PART A

Q.1. Multiple choice questions: (35 Marks)

1) Calculate 10% of the root of 10000.

A) 1000   b) 100   c) 10   d) 1

2) Divide 1500000 numbers in the 3:6:1 ratio.

A) 450000, 900000, 150000   b) 500000, 500000, 500000   c) 400000, 500000, 600000   d)300000,600000, 600000

3) A and b are partners in the firm in 3:5. They earned profit for the year rs. 500000/- calculate the profit from the ratio.

A) 187500, 312500   b) 200000, 300000   c) 150000, 350000   d) 170000, 330000

4) if sum of three numbers is 134 and the ratio between first and second is 3:4, ratio between second and third is 5:8, find the numbers.

A) 30,40,64   b) 50,50,34   c) 60,40,34   d) 40,50,44

5) find three numbers in the ratio 2:3:5 such that the sum of their products, taken two at a time is 1116.

A) 8,16,24   b) 6,21,24   c) 12, 18, 30   d) 12,14, 26

6) convert the following in the smallest ratio.

4 l, 3l and 500 ml

A) 8:6   B) 8:7   C) 8:4   D) 8:2

7) $3X + 5Y = 30$, IF $X = 0$, THEN $Y =$ _____.

A) 3   B) 10   C) 6   D) 4

8) maximax equation means _____.

A) profit   b) loss   c) cost   d) bep

9) which is the origin point of the following.

A) o(0,0)   b) o(1,1)   c) o(2,2)   d) o(3,3)

10) point a(-3,-2) plotted in _____ quadrant.

A) 1st   b) 2nd   c) 3rd   d) 4th

11) point a(-3,2) plotted in _____ quadrant.

A) 1st   b) 2nd   c) 3rd   d) 4th

12) point a (3,2) plotted in _____ quadrant.

A) 1st   b) 2nd   c) 3rd   d) 4th

13) _____ means total income of nation / total population.

A) pci   b) gdp   c) ni   d) hdi

14) from the following which is not an economic indicator.

A) gdp   b) exchange rate   c) gold prices   d) sex ratio

15) Infrastructure facilities consist of ---------------

(a) Railways   (b) Inflation   (c) Fiscal deficit   (d) Fiscal profit

16) The difference between all receipts (revenue and capital) and all expenditures (revenue and capital) is called the --------------

(a) Budgetary deficit   (b) Budgetary profit   (c) Fiscal deficit   (d) Fiscal profit

17) The difference between the merchandise export and import is called ----------

(a) Trade deficit   (b) Trade profit   (c) Trade revenue   (d) Trade balance

18) Beta of a share is

(a) Expected return   (b) Slope of the regression line   (c) X intercept   (d) y intercept

19) A combination of a group of securities is called
(a) Bunch   (b) Portfolio   (c) Sum   (d) Scheme

20) The total risk can be partitioned into the following
(a) Systematic   (b) Unsystematic   (c) systematic and unsystematic   (d) regular

21) Return is calculated as total gain dividend by ------- as a percentage.
(a) Selling price   (b) Purchase price   (b) Discounted price   (d) Return price

22) A scooter was sold after 2 years of its purchase for Rs.35,000 by considering 10% depreciation every year. The SALE price of scooter is
(a) Rs.50,000   (b) Rs.40,000   (c) Rs.52,000   (d) RS. 28000

23) If 19-x, 26-x, 35-x and 50-x are in proportion, then x is
(a) 2   (b) 4   (c) 5   (d) 3

24) Ketan's total marks in History and Geography are 257,His marks in History and Geography are in the ratio 7:8 and in History and Economics are in the ratio 12:11. So his actual marks in there 3 subjects are respectively.
(a) 84,96,77   (b) 77,88,92   (c) 84,69,99   (d) 60,50,40

25) If 12,16, k and 20 are in proportion, the value of k is
(a) 14   (b) 15   (c) 16   (d) 12

26) The value of k, such that the numbers 14,16,35 and k are in proportion is
(a) 42   (b) 45   (c) 40   (d) 46

27) If $p/2=q/3=r/5$, then $p+q+r/r$ is
(a) 2   (b) 3   (c) 5   (d) 1

28) If the angles of a triangle are in the ratio 3:8:9, then their respective degree measures are
(a) $27^0,72^0,81^0$ (b) $32^0,70^0,78^0$ (c) $24^0,64^0,92^0$ (d) $60^0,60^0,60^0$

29) If A is a matrix of order m x n, then it contains
(a) n rows   (b) m rows   (c) mn rows   (d) q rows

30) A square matrix whose determinant value is non-zero is called
(a) Non-singular matrix   (b) Singular matrix   (c) Null matrix   (d) Row matrix

31) A set of simultaneous equations can be solved using
(a) Cramer's Rule   (b) Cromton's Rule   (c) Graham's Rule   (d) Newton's law

32) If two rows of aq determined are interchanged, its value
(a) increases   (b) decreases   (c) does not change   (d) changes its sign

33) A matrix with all elements of value zero is called
(a) Identity matrix   (b) Square matrix   (c) Null matrix   (d) Scaler matrix

34) A matrix of order n, having all non-diagonal elements zero is called
(a) Square matrix   (b) Scaler matrix   (c) Diagonal matrix   (d) Identity matrix

35) Rejecting H_o when it is false, leads to -------- error.
(a) Type I   (b) Type II   (c) No   (d) Type III

Answer Sheet for Multiple Choice Questions

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
1		8		15		22		29	
2		9		16		23		30	
3		10		17		24		31	
4		11		18		25		32	
5		12		19		26		33	
6		13		20		27		34	
7		14		21		28		35	

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PART B

Q.2 - Answer the Following - (Any One out of Three)   (10 M)

A) What is sampling? Explain in brief.

B) What is the null hypothesis? Explain in brief.

C) Solve graphically: Minimize $2x_1 + 4x_2$ subject to $6x_1 + x_2 \geq 18$, $x_1 + 4x_2 \geq 12$, $2x_1 + x_2 \geq 10$, $x_1, x_2 \geq 0$ (draw graph on answer sheet only)

Q.3 - Answer the Following - (Any One out of Three)   (10 M)

A) What are matrices and what are the types of matrices?

B) Solve the following equations simultaneously using Cramer's rule.

$x+2y+z = 6$, $2x -2y +z = 1$, $-x +2y - 2z = 5$

C) IF A = $\begin{pmatrix} 1 & -3 & 7 \\ 4 & 6 & 2 \\ 5 & 4 & 3 \end{pmatrix}$ B = $\begin{pmatrix} 3 & 4 & 5 \\ 6 & 7 & 8 \\ 1 & -2 & 9 \end{pmatrix}$ find AxB.

Q.4 - Answer the Following - (Any One out of Three)   (10 M)

A. FIND THREE NUMBERS IN THE RATIO 1:2:3 SUCH THAT SUM OF THEIR SQUARES IS 686.

B. MR. ARIF'S MONTHLY SALARY IS RS. 50000/-. HE SPENDS 30% ON FOOD, 5% ON CLOTHING, 10% ON HOUSE RENT AND 25% ON MISCELLANEOUS ITEMS. FIND HIS ACTUAL EXPENSES AND THE AMOUNT HE SAVES.

C. IF SUM OF THREE NUMBERS IS 134 AND THE RATIO BETWEEN FIRST AND SECOND IS7 3:4, RATIO BETWEEN SECOND AND THIRD IS 5:8, FIND THE NUMBERS.

Q.5 - Answer the Following - (Any One out of Three)   (10 M)

A) find the total risk of a share of company M whose probability distribution of return is given below. Also find the standard deviation of returns.

Returns in %	Probability
-15	0.10
-10	0.15
-5	0.20
0	0.20
6	0.15
12	0.10
20⁻	0.10

B) The following table gives the probability distribution of the return of two shares X and Y. Find the expected value and the total risk for both shares and comment.

State of economy	1	2	3	4	5
Probability	0.10	0.20	0.35	0.25	0.10
Returns of share X (%)	5	6	7	8	9
Return on share Y (%)	3	5	7	9	11

C) What are economic indicators? Explain a few of them.

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