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Reg. No.....

Name.....

B.A. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2016

Fifth Semester

B.A. Economics

Core Course—QUANTITATIVE TECHNIQUES FOR ECONOMIC ANALYSIS

(2013 Admission onwards)

Time : Three Hours

Maximum : 80 Marks

Part A (Definition Type Questions)

Answer all questions.

Each question carries 1 mark.

1. Statistical unit.
2. Primary data.
3. Census sampling.
4. Polygon.
5. Progression.
6. Scalar matrix.
7. Power set.
8. Weighted price index numbers.
9. Seasonal variation.
10. Frequency curve.

(10 × 1 = 10)

Part B (Short Answer Questions)

Answer any eight questions.

Each question carries 2 marks.

11. Define and explain the meaning of Statistics.
12. Mention any four advantages of secondary data.
13. Define Sample design.

Turn over

14. What are the properties of real numbers ?
15. What do you mean by minor of an element of a matrix ?
16. Write note on universal set.
17. Write the formula of Fisher's ideal index numbers.
18. Write a note on irregular variations.
19. During a certain period, the cost of living index number goes upto from 110 to 200 and the salary of the worker is also raised from Rs. 3,250 to Rs. 5,000. Does the worker really gain and if so by how much in real terms ?
20. Find 10th term of the progression 2, 7, 12,.....,
21. If $A = \begin{bmatrix} 6 & 0 & -7 \\ 7 & -2 & 3 \end{bmatrix}$. Find $3A$.
22. Write in words the following set notations :
 - (i) $A \subseteq B$; and (ii) $x \in A$.

(8 × 2 = 16)

Part C (Short Essay Questions)

Answer any **six** questions.

Each question carries 4 marks.

23. Explain the importance of Statistics in business.
24. Define tabulation. What are the objectives of tabulation ?
25. Differentiate between Census and Sample Methods.
26. Write a note on methods of describing a set.
27. What are the different steps involved in constructing index numbers ?
28. Represent the following using Venn diagrams :
 - (i) $A \cap B$; (ii) $A \cup (B \cup C)$; and (iii) $A \cap (B \cup C)$.
29. Given the system of equations :

$$2x + 3y + 5z = 7, 5x + 4y + 7z = 9 \text{ and } 3x - 7y + 8z = 10.$$

Express these equations into the matrix equation $AX = B$ and find A, X, B .

30. Consumer expenditure on various items is given below. Draw a pie chart :

<i>Items</i>	:	A	B	C	D	<i>Others</i>
<i>Units Purchased</i>	:	400	200	1400	1600	300

31. A bank pays interest @ 6% p.a. compounded continuously. If a person places Rs. 1,000 in the bank each year, how much will be in his account after 3 years.

(6 × 4 = 24)

Part D (Long Essays)

Answer any two questions.

Each question carries 15 marks.

32. Explain the functions of Statistics.
 33. Define time series. What are the components of time series ?
 34. Calculate Pasche's and Fisher's ideal index numbers :

Commodities	Quantity (units)		Price (Rs.)	
	2005	2006	2005	2006
A	100	150	500	900
B	80	100	320	500
C	60	72	120	360
D	30	33	360	297

35. What is a trend in a time series ? The following table gives the annual sales (in Rs. '000) :

<i>Year</i>	<i>Sales</i>
2000	710
2001	705
2002	680
2003	687
2004	757
2005	629
2006	644
2007	783
2008	781
2009	805
2010	872

Determine the trend by calculating the 5 yearly moving average.

(2 × 15 = 30)