E 2894 (Pages : 3) Reg. No.....

Name.....

B.A. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2022

Fifth Semester

B.A. Economics

Core Course—QUANTITATIVE TECHNIQUES FOR ECONOMIC ANALYSIS

(2013 to 2016 Admissions)

Time : Three Hours Maximum Marks : 80

Part A (Very Short Answer Type Questions)

Answer **all** *questions.*
Each question carries 1 *mark.*

1. Give any two functions of Statistics.
2. What do you mean by census ?
3. Enumerate the different types of classification of data.
4. What are Ogives ?
5. What is a sequence ? Give an example.
6. Define with an example the term "Cartesian Product".
7. Define an Index Number.
8. Give the formula of simple aggressive Index number.
9. What is a timer series ?
10. What are irregular variations ?

(10 × 1 = 10)

Part B (Short Answer Type Questions)

Answer any **eight** *questions.*
Each question carries 2 *marks.*

11. Give any one definition of Statistics.
12. State the different sources of secondary data.
13. Distinguish between Probability sampling and Non-probability sampling.
14. What is the difference between diagrams and graphs ?
15. Find the sum of the series of the arithmetic progression 1 + 2 + 3 + ... + 100.
16. Define the terms (i) Linear function ; (ii) Quadratic function.
17. Define an idompotent matrix.

Turn over

18. Why Index numbers are called "economic barometers" ?
19. What type of 'bias' observed in Laspeyre's and Paasche's Index Number ?
20. Show that Fishers index number is the geometric mean of Laspeyre's and Paasche's index number of prices.
21. State the merits of semi-average method.
22. Give an example of seasonal variation in business data.

$(8 \times 2 = 16)$

Part C (Short Essay Type Questions)

Answer any **six** *questions.*
Each question carries 4 *marks.*

23. What is a random sample ? Discuss the different methods of selecting a random sample.
24. What are the important precautions to be taken while preparing a statistical table ?
25. How will you construct a frequency table for a given set of observations ?
26. How will you construct an historgram for a frequency distribution with un equal class intervals ?
27. Solve the following system of linear equations $4x + 3y = 4; 3x + 4y = 10$.
28. Define the terms :
    (i) Null matrix. (ii) Square matrix.
    (iii) Triangular matrix. (iv) Symmetric matrix.
29. If $f(x) = 2(x+1)^2 - 5$. Find $f(-1), f(2)$ and $f(0)$ and hence calculate $\frac{f(-1)+f(0)}{f(2)}$.
30. Calculate simple aggressive index number for the following data :—

Commodities	Price in 2015	Price in 2020
A	50	70
B	40	60
C	80	90
D	110	120
E	20	20

31. What are the limitations of Index numbers ?

$(6 \times 4 = 24)$

Part D (Long Essay Type Questions)

Answer any **two** *questions.*
Each question carries 15 *marks.*

32. Draw Ogives for the following frequency distribution :—

Marks	10—19	20—29	30—39	40—49	50—59	60—69	70—79
No. of students	4	6	10	20	10	6	4

From this find :

(i) The number of students having marks less than 55.

(ii) The number of students having marks between 40 and 60.

33. Define the different types of sets. Also mention the different set operation with examples using Venn diagram. State the algebra or properties of sets.

34. Calculate Marshall-Edgeworth Index number for the following data :

Items	2012		2018	
	Price	Quantity	Price	Quantity
I	5	62	6	71
II	7	43	8	100
III	9	93	12	65

35. Explain family budget method of calculating cost of living index number. Calculate cost of living index number for the following data :

Articles	Quantity in 2010	Unit	Price in 2010	Price in 2011
Wheat	2 quintal	Per quintal	150	165
Gram	1 quintal	Per quintal	80	100
Rice	1 quintal	Per quintal	120	150
Bajra	1.5 quintal	Per quintal	60	90
Arthar	1.5 quintal	Per quintal	100	140
Oil	10 kg.	Per kg.	10	12
Gur	40 kg.	Per kg.	2	3

$(2 \times 15 = 30)$