

D 12351

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Name.....

Reg. No.....

THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION, NOVEMBER 2016

(CUCBCSS—UG)

Common Course

A 11—BASIC NUMERICAL SKILLS

Time : Three Hours

Maximum : 80 Marks

Part I

Answer all questions.

1. A series is obtained by adding a constant number to its preceding term is _____.
(a) G.P. (b) A.P.
(c) G.P. or A.P. (d) None.
2. Which of the following measure is based on all the observations ?
(a) A.M. (b) G.M.
(c) H.M. (d) All.
3. Which measure ensures highest degree of reliability ?
(a) Range. (b) MD.
(c) SD. (d) QD.
4. Circle diagram is also called :
(a) Pictogram. (b) Cartogram.
(c) Pie diagram. (d) None.
5. _____ index is known as the 'ideal' index.
(a) Laspeyre's. (b) Paasche's.
(c) Fisher's. (d) Kelley's.
6. Example of probability sampling is :
(a) Quota sampling. (b) Judgement sampling.
(c) Convenience sampling. (d) None.
7. One common difference of the A.P. 1, - 1, - 3, - 5, _____ is :
(a) 1. (b) - 1.
(c) - 2. (d) 2.

Turn over

8. When $A = \{a, b\}$, its power set has _____ elements.
- (a) 2. (b) 8.
(c) 1. (d) 4.
9. Statistics deals with :
- (a) Qualitative data. (b) Quantitative data.
(c) Both. (d) None of these.
10. A time series is a set of values arranged in _____ order.
- (a) Ascending. (b) Descending.
(c) Chronological. (d) None.

(10 × 1 = 10 marks)

Part II (Short Answer Questions)*Answer any eight questions.*

11. What is power set ?
12. What is a pie-diagram ?
13. What is progression ?
14. What do you understand by classification of data ?
15. Define matrix.
16. Represent $A = \{x/x \text{ is an integer, } x^2 \leq 4\}$ in roster form.
17. Find mode from the following data :
- | | | | | | | | | | |
|--------------|---|---|----|----|----|----|----|----|----|
| Size | : | 5 | 8 | 10 | 12 | 29 | 35 | 40 | 46 |
| No. of items | : | 3 | 12 | 25 | 40 | 31 | 20 | 18 | 7 |
18. $P + 2, 4P - 6, 3P - 2$ are three consecutive terms of an A.P. Find the value of P.
19. Solve : $3x + 8 = 17$.
20. Find the compound interest earned on Rs. 100 invested for two years at 10% compounded semiannually.

(8 × 2 = 16 marks)

Part III (Short Essays)*Answer any six questions.*

21. Define primary data. State the various methods of collecting primary data.
22. The third term of a GP is 4. Find the product of its first 5 terms.

23. Calculate median for the following data :

Class	:	0-5	5-10	10-15	15-20	20-25
Frequency	:	5	10	15	12	8

24. Consider the statement : "Integers between -3 and 3 ". Write the roster and set builder forms.

25. Solve $5y + y = 30$.

26. Draw the less-than ogive of the following frequency distribution and locate the median there from :

Marks	:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	:	4	8	11	15	12	6	3

27. In Mumbai city, there are 1000 families. A survey indicated that 300 subscribe to 'The Hindustan Times' daily newspaper and 250 subscribe to 'The Indian Express' daily newspaper. Of these two categories, 100 subscribe to both. Express the data using Venn diagram.

28. A man travelled from one place to another at the rate of 20 kms/hour and returned at the rate of 30 kms/hour. Find the average speed in the whole journey.

(6 × 4 = 24 marks)

Part IV (Long Essays)

Answer any two questions.

29. From the following data find the trend values by 5 yearly moving averages :

Year	:	2000	2001	2002	2003	2004	2005	2006	2007	2008
Sales	:	36	43	43	34	44	54	34	24	14

30. In an election 72,000 votes were casted. Out of four candidates, the first got 24,000 votes, the second got 20,000 votes, the third got 18,000 votes and the fourth got 10,000 votes. Draw a pie-chart for these data.

31. Find the inverse of a matrix A given by :

$$A = \begin{bmatrix} 5 & -2 & 4 \\ -2 & 1 & 1 \\ 4 & 1 & 0 \end{bmatrix}$$

(2 × 15 = 30 marks)

Handwritten notes for question 31:

$$100 \left(1 + \frac{5}{100} \right)^4$$

$$100 (1.05)^4$$

$$n = 2 \times 2 = 4$$

$$a_1 \times a_2 \times a_3 \times a_4$$

$$a_1 \times a_2 \times a_3 \times a_4 = 7$$