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 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)

D 12351-A (Pages : 4) Name.....

Reg. No.....

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Common Course

A 11—BASIC NUMERICAL SKILLS

(Multiple Choice Questions for SDE Candidates)

Time : 15 Minutes	Total No. of Questions : 20	Maximum : 20 Marks

INSTRUCTIONS TO THE CANDIDATE

1. This Question Paper carries Multiple Choice Questions from 1 to 20.
2. The candidate should check that the question paper supplied to him/her contains all the 20 questions in serial order.
3. Each question is provided with choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and enter it in the main answer-book.
4. The MCQ question paper will be supplied after the completion of the descriptive examination.

A 11—BASIC NUMERICAL SKILLS

(Multiple Choice Questions for SDE Candidates)

1. A time series is unable to adjust the influences like :

   (A) Customs and policy changes. (B) Seasonal changes.

   (C) Long term influences. (D) None of these.

2. ——— Index is based on the price and quantities of both base year and current year.

   (A) Paasche's. (B) Laspeyer's.

   (C) Fishers. (D) None of these.

3. Measures of central tendency are called averages of the ——— order.

   (A) First. (B) Second.

   (C) Third. (D) None.

4. ——— is called positional measure.

   (A) Mean. (B) Median.

   (C) Mode. (D) Harmonic mean.

5. Index number for the base period is always taken as :

   (A) 200. (B) 50.

   (C) 1. (D) 100.

6. Divided bar chart is considered for :

   (A) Comparing different components of a variable.

   (B) The relation of different components to the total.

   (C) (A) or (B).

   (D) (A) and (B).

7. In chronological classification data are classified on the basis of :

   (A) Attributes. (B) Class intervals.

   (C) Time. (D) Area.

8. In direct personal investigation, the investigator should be :

(A) Biased. (B) Tactful.

(C) Optimistic. (D) All these.

9. A single value which can represent the whole set of data is called :

(A) Set. (B) Average.

(C) Interest. (D) Matrices.

10. The second quartile is equal to :

(A) Mean. (B) Median.

(C) Mode. (D) Standard deviation.

11. Statistical results are :

(A) Absolutely correct. (B) Not true.

(C) True on an average. (D) Universally true.

12. Tally marks determine :

(A) Class width. (B) Class boundary.

(C) Class Limit. (D) Class frequency.

13. Bar diagrams are :

(A) One dimensional. (B) Two.

(C) Three. (D) None of these.

14. The point of intersection of the less than and the greater than ogives corresponds to :

(A) Mean. (B) Mode.

(C) Median. (D) Geometric Mean.

15. In a rail accident the appropriate method of data collection is :

(A) Personal enquiry. (B) Indirect oral investigation.

(C) Direct Interview. (D) All these.

16. The difference between the maximum and the minimum observation of the given data is called _____.

(A) Range. (B) Mean Deviation.

(C) Quartile Deviation. (D) Standard Deviation.

17. A time series is a set of data recorded :

(A) Periodically. (B) At time intervals.

(C) At successive points of time. (D) All the above.

18. Index numbers are :

(A) Special type of averages. (B) Measure of the economic barometers.

(C) Measure of relative changes. (D) All of these.

19. Consumer price Index number is constructed for :

(A) A well defined section of people. (B) All people.

(C) Factory workers only. (D) All the above.

20. For a normal distribution, $Q_3 + Q_1 - 2$ median = _____.

(A) 2. (B) 1.

(C) 3. (D) 0.