THIRD SEMESTER (CUCBCSS—UG) DEGREE [SPECIAL] EXAMINATION NOVEMBER 2019

Common Course—Sanskrit

SKT 3A 09(01)—DRAMA AND ALANKARA

Time : Three Hours   Maximum : 80 Marks

*Answers may be written **either** in Sanskrit **or** in English **or** in Malayalam.*
In writing Sanskrit, Devanagari script should be used.

I. वाक्येन वाक्याभ्यां वा **दश** प्रश्नान् समाधत्त :

(Answer any *ten* of the following in one *or* two sentences) :

1   Who wrote the play Mricchakatika ?

2   Which are the plays mentioned in the Mahabhashya of Patanjali ?

3   Who is the author of Mahaviracharita ? Mention its theme.

4   Which are the plays composed by Bhasa based on Mahabharata ?

5   ब्राह्मणि ! किं न स्मरसि तत्र भवता जलक्लिन्नेन मुनिना उक्तम् ।—What did Jalaklinna say ?

6   महर्षे: धौम्यस्याश्रमं गता: Who ? Why ?

7   सकळत्रोऽस्मि प्रस्थित: Who ? Where ?

8   द्वितीय:—भोस्तात ! एष गच्छामि । Where does Madhyama leave ? Why ?

9   एष ते भयमुपदिशामि, गृह्यतामायुधम्—Whose words are these ?

10   भो पुरुष पूर्वसमयं स्मर—Mention the promise that Ghatotkacha refers to ?

11   Define Deepaka.

12   Give an example of उक्तविषया वस्तूप्रेक्षा ।

(10 × 1 = 10 marks)

Turn over

II. कमपि भागमनपहाय यथानिर्देशं **पञ्चानाम्** उत्तरं लिखत

(Answer any *five* as per direction without omitting any part) :

Part A : टिप्पणिं लिखत (Write short notes) :

    13 Mudrarakshasa.

    14 Abhijnanasakuntala.

Part B : सप्रकरणमाशयं विशदयत (Annotate) :

    15 सन्त्रस्तवत्सक इवाकुलतामुपैति ।

    16 न मुच्यते तथा ह्येष गृहीतो मातुराज्ञया ।

    17 रुष्टोऽपि कुञ्जरो वन्यो न व्याघ्रं धर्षयेद्वने ।

Part C : सप्रमाणमलङ्कारं निर्णीत (Find and describe Alankara) :

    18 सर्वदो माधवः पायात्स योऽगङ्गामधीधरत् ।

    19 मदेन भाति कलभः प्रतापेन महीपतिः ।

                                                     (5 × 4 = 20 marks)

III. कमपि भागमनपहाय यथानिर्देशं **षण्णाम्** उत्तरं लिखत :

(Answer any *six* as per direction without omitting any part) :

Part A : व्याख्यात (Explain fully) :

    20 ग्रहयुगळनिभाक्षः पीनविस्तीर्णवक्षाः

        कनककपिलकेशः पीनकौशेयवासाः

        तिमिरनिवहवर्णः पाण्डरोद्धृत्तदंष्ट्रो

        नव इव जलगर्भो लीयमानेन्दुलेखः ॥

    21 सिंहाकृतिः कनकतालसमानबाहुः

        मध्ये तनुर्गरुडपक्षविलिप्तपक्षः ।

        विष्णुर्भवद् विकरिताम्बुजपत्रनेत्रो

        नेत्रे ममाहरति बन्धुरिवागतोऽयम् ॥

22 आक्रम्य राक्षसमिमं ज्वलदुग्ररूपमुग्रेण बाहुबलवीर्यगुणेन युक्तम् ।

एष प्रयाति शनकैरवधूय शीघ्रमासारवर्षमिव गोवृषभः सलीलः ॥

23 खगशतविरुते विरौति तारं

द्रुमगहने दृढसङ्कटे वनेऽस्मिन् ।

जनयति च मनोज्वरं स्वरोऽयं

बहुसदृशो हि धनञ्जयस्वरस्य ॥

Part B : लघूपन्यासमारचयत (Write short essay) :

24 Sketch the character of Khatotkacha.

25 Bhavabhuti and his plays.

26 Saktibhadra.

27 Define and illustrate उपमा ।

28 Define and illustrate अर्थान्तरन्यास ।

(6 × 5 = 30 marks)

IV. Write essays on any *two* : (द्वावधिकृत्य उपन्यासं रचयत) :

29 Give a critical summary of the play Madhyamavyayoga.

30 Describe the re-union of Bhimasena with Hidimba and his son Khatotkacha.

31 Define and illustrate Utpreksha.

(2 × 10 = 20 marks)

D 11990

Name...

Reg. No...................................

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course [B.Sc. LRP (Alternate Pattern)]

ELE 3A 12—SENSORS AND TRANSDUCERS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 30.

1. What is meant by direct sensing in transducers ?

2. What is an active transducer ? Explain with an example.

3. Define the accuracy and precision of a transducer.

4. What is meant by the dynamic characteristics of a transducer ? List these characteristics.

5. What is the basic principle of a potentiometer ?

6. Explain the effect of change in distance between the plates of a capacitance transducer.

7. What are the different types of thermistors ? Explain.

8. What is an RTD ? What is its basic principle ?

9. What is LDR ? How does it work as a sensor ?

10. What is the working principle of the IR sensor ?

11. What is the difference between continuous level and discrete level measurements ?

12. What is a pressure transducer ? What is it used for ?

13. State and explain Bernoulli's principle.

14. What is Hall Effect ? Why it is used ?

15. What is an Anemometer ?

(10 × 3 = 30 marks)

Turn over

Section B

Answer at least **five** *questions.*
Each question carries 6 *marks.*
All questions can be attended.
Overall Ceiling 30.

16. What are the different parts of an inductance transducer ? Explain with a diagram.

17. Explain the principle of the basic capacitance transducer.

18. Explain the measurement of temperature using a thermocouple with a diagram.

19. Explain the working of capacitive level gauges.

20. Explain the working of LVDT with a neat sketch.

21. Explain the pressure measurement with a U-tube manometer.

22. Explain the working of a venturi tube.

23. Write short notes on sound transducers.

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain the working of bonded resistance strain gauge.

25. What is the basic principle of capacitance transducers ? Explain the capacitance transducers which work on the change of the area of plates.

26. Explain well type manometers.

27. Explain the basic principle and working of the electromagnetic flowmeter.

(2 × 10 = 20 marks)

D 11989

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THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION
NOVEMBER 2021

Common Course (B.Sc. L.R.P. (Alternate Pattern)

ELE 3A 11—PYTHON PROGRAMMING

(2019–2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 30.

1. What is python Virtual machine ?

2. What are keywords or reserved words in python ?

3. What are the different Identity operators in python with examples ?

4. Explain input statements in Python.

5. Write the syntax of while loop.

6. What are infinite loops ?

7. What do you mean by indentation ?

8. What is the purpose of Return statement ?

9. Define keyword arguments in a function.

10. What are global variables ?

11. Define recursion.

12. Define mutable and immutable objects. Give examples.

13. How strings are sliced ?

14. How lists can be accessed using while loop ?

15. What is a set ?

(10 × 3 = 30 marks)

Turn over

Section B

16. Explain the different arithmetic operators used in Python with examples.

17. Discuss the int(), float(), str(), complex() and list() type conversion functions with examples.

18. Write Python code to solve the quadratic equation $ax^2 + bx + c = 0$ by getting the input coefficient from the user.

19. Write a Python program to find the LCM of two numbers.

20. Discuss zip() function with an example.

21. Explain nested function with an example.

22. Describe the syntax for the following function and explain with an example :

    (a) upper().   (b) pop().

    (c) title().   (d) index().

    (e) split().

23. Distinguish between list, tuple and dictionary.

                                                                (5 × 6 = 30 marks)

Section C

24. Write a Python program to reverse a number and find the sum of the digits in the reversed number. Prompt the user for input.

25. Illustrate the decision control statements in Python with flow charts.

26. Write a Python program using function to find the sum and average of the elements in a list without using in built functions

27. Write a Python program that accepts a sentence and calculate the number of words, digits, uppercase letters and lowercase letters.

                                                                (2 × 10 = 20 marks)

D 11988

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THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course (B.Sc. LRP (Alternate Pattern))

A12—RESEARCH METHODOLOGY

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 30.

1. Define Google Scholar.

2. What is ISSN Number ?

3. Define Inflibnet.

4. What is PubMed ?

5. Write a note on Summer Schools.

6. What is Medline ?

7. What is Agricola ?

8. Write a note on SPSS.

9. Differentiate reprints and pdf formats.

10. What is Keywords ?

11. What is abstract ?

12. Write a note on Science citation index.

13. What is Appendix ?

14. Write a note on review articles.

15. What is a manuscripts ?

(10 × 3 = 30 marks)

Section B

Answer at least **five** *questions.*
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 30.

16. Write a note on arrangement of Bibliography, quoting and reference in thesis.

17. Explain the concept of planning of research.

Turn over

18. Write an account on preparation of project proposal.

19. Explain the method of collection of literature.

20. Write an account on short communication.

21. Explain the method of data analysis.

22. Write an account on plagiarism.

23. Explain the process of Paper presentation in Conferences.

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain Collection of protocols and selection of suitable methods in research work.

25. Write an account on Thesis structure. Briefly discuss, Introduction, review of literature, Materials & Methods, results, Discussion and reference.

26. Explain various digital library and search of research articles.

27. Write an account on various statistical tools and software for analysing the results.

(2 × 10 = 20 marks)

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THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course (B.Sc. L.R.P. (Alternate Pattern))

A12—INFORMATICS AND EMERGING TECHNOLOGIES

(2019—2020 Admissions)

Time : Two Hours and a Half　　　　　　　　　　　　　　Maximum : 80 Marks

Section A

Answer atleast **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall ceiling 30.

1. List any four educational websites.

2. Compare the role of RAM and secondary storage devices.

3. What are the different types of operating systems ?

4. What is WLL technology ?

5. Give any two key features of smart phones.

6. Give any two limitations of a mobile phone in comparison to a lap top in terms of software applications.

7. Give any two advantages of using optical fibre.

8. State the working principle of holograms.

9. Highlight any two applications of LASER in medical filed.

10. Differentiate between cyber security and cyber forensic.

11. Write any two security threats in social media.

12. Write any two desirable features of a password.

13. Define biometrics.

14. What do you mean by multimodal biometrics ?

15. Give any one situation where face recognition cannot be used for authentication.

(10 × 3 = 30 marks)

Turn over

Section B

Answer atleast **five** *questions.*
Each question carries 6 marks.
All questions can be attended.
Overall ceiling 30.

16. Write a note on operating systems.

17. Discuss PCS networks.

18. Write a note on WLANs.

19. Discuss applications of LASER in entertainment.

20. Discuss the issues in online banking security.

21. Write a note on cyber forensic.

22. Discuss the process of recognizing a person from iris image.

23. Explain the steps in automatic signature verification.

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 marks.

24. Compare GSM, AMPS and CDMA.

25. Discuss the applications of Holography in data storage and security.

26. Summarize the key aspects of IT act 2008.

27. Elaborate the steps in finger print verification. Identify the merits and limitations of face recognition, iris recognition, speaker identification and hand geometry based verification.

(2 × 10 = 20 marks)

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THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course [B.Sc. L.R.P. (Alternate Pattern)]

A11—BIODIVERSITY–SCOPE AND RELEVANCE

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 30.

1. What is ecosystem diversity ?

2. What is *ex situ* conservation ?

3. What is a gene bank ?

4. Write a note on national parks.

5. Write a note on biosphere reserves.

6. Write a note on species extinction.

7. What is genetic diversity ?

8. Expand IUCN.

9. What is an endangered species ?

10. Define species diversity.

11. What is a gene pool ?

12. Write a note on national parks.

13. What is a Wild Life Sanctuaries ?

14. What is a Threatened species ?

15. What is Antibiotics ?

(10 × 3 = 30 marks)

Turn over

Section B

Answer at least **five** *questions.*
Each question carries 6 *marks.*
All questions can be attended.
Overall Ceiling 30.

16. Write an outlines on the magnitude of bacterial and fungal diversity.

17. Explain the importance of biodiversity in daily life.

18. What are the conservation strategies of biodiversity.

19. Write an account on microbial culture collections.

20. Explain Agrobiodiversity with suitable example.

21. Write an account on the concept- *India as mega biodiversity nation.*

22. Write an account on biodiversity crisis.

23. Explain direct and indirect economic benefits of biodiversity.

                                                         (5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain various causes and factors on Loss of Biodiversity.

25. Write an account on ethical and aesthetic values of biodiversity.

26. Write an account on the impact of climate change on biodiversity.

27. Explain different type of hot spots in India.

                                                         (2 × 10 = 20 marks)

THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course—[B.Sc. L.R.P. (Alternate Pattern)]

A 12—GENERAL INFORMATICS AND INSTRUMENTATION

(2019—2020 Admissions)

(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 12—GENERAL INFORMATICS AND INSTRUMENTATION

(Multiple Choice Questions for SDE Candidates)

1. What is Internet Explorer ?

    (A)   An Icon.
    (B)   A File Manager.

    (C)   A Browser.
    (D)   The Internet.

2. Webcasting :

    (A)   Casting of elements for web.
    (B)   Broadcast over internet.

    (C)   Hosting of web page.
    (D)   None of the above.

3. In Open Office.org. "Calc" is a :

    (A)   Word Processor.
    (B)   Spreadsheets.

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

4. ———————— refers to sending large number of mail to the victim, which may be an individual or a company or even mail servers there by ultimately resulting into crashing.

    (A)   Email bombing.
    (B)   Logic bomb.

    (C)   Virus.
    (D)   None of the above.

5. Which of the following is a processed thing ?

    (A)   Data.
    (B)   Information.

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

6. What is information ?

    (A)   Raw data.
    (B)   Processed data.

    (C)   Collection of data.
    (D)   None of these.

7. ———————— developed the integrated circuits.

    (A)   Kim Philby.
    (B)   Jack Philby.

    (C)   John Neumann.
    (D)   Thomas Watson.

8. Which of the following period is the second generation of computing ?

    (A)   1945-55.
    (B)   1956-63.

    (C)   1964-1971.
    (D)   None of the above.

9. This is based on individuals who know how to use these technologies and those who do not :

    (A)   Access.
    (B)   Usage.

    (C)   Usage Quality.
    (D)   None of the above.

10. Which of the following is not one of the four major functions of a computer ?

    (A)   Output.
    (B)   Storage.

    (C)   Processing.
    (D)   Calculation.

11. All of the following are important to consider when buying an LCD monitor EXCEPT :

    (A)   Brightness.
    (B)   Viewing angle.

    (C)   Pixel swap rate.
    (D)   Resolution.

12. Computer to computer exchange of business documents is called ——————.

    (A)   EDI.
    (B)   GPS.

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

13. G2C e-governance means ——————.

    (A)   Government to Government.
    (B)   Government to Citizens.

    (C)   Government to Employees.
    (D)   None of these.

14. E. H. R. means ——————.

    (A)   Electronic Health Record.
    (B)   Electronic Health Care.

    (C)   Election hour report.
    (D)   None of these.

15. The most flexible network topology is :

    (A)   Ring.
    (B)   Star.

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

16. Computers are used in business to :

    (A) Process transactions.

    (B) Allow people to work at home.

    (C) Do desktop publishing of documents.

    (D) All of the above.

17. The most powerful computer is most likely called a :

    (A) Workstation.   (B) Minicomputer.

    (C) Mainframe.   (D) Supercomputer.

18. This is a mechanism of delivery of short messages over the mobile networks :

    (A) MMS.   (B) SMS.

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

19. These computers made of genes building blocks :

    (A) Motherboard.   (B) Personal computers.

    (C) DNA computers.   (D) Graphic cards.

20. Which of the following is not a use of computers in the legal environment ?

    (A) Creating animations that simulate the crime for use in the courtroom.

    (B) Tracking criminal behavior patterns.

    (C) Predicting criminal behavior patterns.

    (D) Conducting interviews with suspects.

THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course—[B.Sc. L.R.P. (Alternate Pattern)]

A12—GENERAL INFORMATICS AND INSTRUMENTATION

(2019—2020 Admissions)

Time : Two Hours and a Half   Maximum : 80 Marks

Section A

Answer atleast **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall ceiling 30.

1. DIKW Cycle.
2. Pharming.
3. BRNET.
4. SRAM.
5. SCSI.
6. DoS Attack.
7. Encrypting.
8. TRIPS Agreement.
9. HHD.
10. Unicode.
11. RoHS Directive.
12. SMPS.
13. Phishing.
14. Cache Memory.
15. Firewire Card.

(10 × 3 = 30 marks)

Section B

Answer atleast **five** *questions.*
Each question carries 6 marks.
All questions can be attended.
Overall ceiling 30.

16. What are cookies and how they can be harmful ?

17. Give an account on Ad-Hoc mobile distributed system.

Turn over

18. What are the benefits of *e*-governance ?

19. Write a paragraph about NICENET.

20. Write in detail about smart cards.

21. What you mean by information overload ? Briefly explain.

22. Briefly explain the advantages and disadvantages of infra-red communications.

23. What is hacking ? How hackers are classified into different groups ?

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*

Each question carries 10 *marks.*

24. Write in detail about the advantages and disadvantages of mobile computing systems.

25. Write in detail about various data storage devices in computers.

26. Digital divide is the most serious social issue aggravated by information revolution. Elucidate the statement.

27. Write an essay about the most common motherboard form factors.

(2 × 10 = 20 marks)

D 11984–A

(Pages : 4)

Name..

Reg. No...................................

THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course (B.Sc. L.R.P. Alternate Pattern)

A 11—BASIC MATHEMATICS FOR MEDIA ARTS

(2019–2020 Admissions)

(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 MATHEMATICS FOR MEDIA ARTS

(Multiple Choice Questions for SDE Candidates)

1. Which among the following is not included in the process of Statistics ?

   (A) Analyze.

   (B) Collect.

   (C) Drawing.

   (D) Organize.

2. Which among the following is not included in the Statistical Enquiry cycle ?

   (A) Planning.

   (B) Data collection.

   (C) Travelling.

   (D) Finding conclusion.

3. The primary data are collected by ————.

   (A) Observation.

   (B) Interview.

   (C) Questionnaire.

   (D) All these

4. Statistics are ————.

   (A) Aggregate of facts.

   (B) Numerically expressed.

   (C) Systematically collected.

   (D) All these.

5. Frequency distribution is ————.

   (A) A table.

   (B) A variable.

   (C) Total Frequency.

   (D) Class Intervals.

6. Histogram is useful to determine ————.

   (A) Mean.

   (B) Median.

   (C) Mode.

   (D) All these.

7. Bar diagrams are ————.

   (A) One dimensional.

   (B) Two.

   (C) Three.

   (D) None of these.

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

    (A) Mean.   (B) Mode.

    (C) Median.   (D) Geometric Mean.

9. Diagrams are tools of —————.

    (A) Collection of data.   (B) Analysis of data.

    (C) Summarisation of data.   (D) Presentation of Data.

10. Which method of data collection covers the widest area ?

    (A) Direct personal investigation.   (B) Mailed questionnaire method.

    (C) Direct interview method.   (D) All these.

11. In pic diagram, divisions are shown by means of —————.

    (A) Circle.   (B) Sector.

    (C) Circle or sector.   (D) None.

12. Which is not a measure of variation ?

    (A) Range.   (B) Quartile Deviation.

    (C) Standard Deviation.   (D) Mode.

13. 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.

14. Index numbers are —————.

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

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

15. The best average for constructing an Index number is —————.

    (A) Arithmetic mean.   (B) Harmonic mean.

    (C) Geometric mean.   (D) Weighted mean.

Turn over

16. The standard deviation of 10, 16, 10, 16, 10, 10, 16, 16.

    (A) 4.   (B) 6.

    (C) 3.   (D) 0.

17. Kelley's co-efficient of Skewness is based on :

    (A) Mean.   (B) Quartiles.

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

18. Which among the following is a right angle triangle ?

    (A) 10, 60, 70.   (B) 45, 45, 90.

    (C) 60, 60, 60.   (D) 40, 50, 50.

19. Two adjacent angles of a parallelogram are equal. What is the measure of each of these angles ?

    (A) 85°.   (B) 90°.

    (C) 65°.   (D) 100°.

20. How many faces are there for a pyramid ?

    (A) 4.   (B) 5.

    (C) 6.   (D) 7.

D 11984

THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course (B.Sc. L.R.P. Alternate Pattern)

A 11—BASIC MATHEMATICS FOR MEDIA ARTS

(2019–2020 Admissions)

Time : Two Hours and a Half   Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 30.

1. Volume.

2. Square.

3. Surface area.

4. Cube.

5. Isosceles triangle.

6. Right angle.

7. Mode.

8. Rectangle diagonal.

9. Geometric mean.

10. Percentage.

11. Circumference.

12. Pi.

13. Perimeter.

14. Cumulative frequency

15. Quartile Deviation.

(10 × 3 = 30 marks)

Turn over

Section B

*Answer at least **five** questions.*
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 30.

16. Find the central tendencies for given series :

28, 36, 34, 28, 48, 22, 35, 27, 19, 41.

17. Differentiate ascending and descending.

18. Explain frequency distribution.

19. Find the surface area of a sphere with a diameter 8 cm.

20. Draw the table and find cumulative frequency :

Marks	Frequency
0-5	2
5-10	6
10-15	13
15-20	17
20-25	11
25-30	4
30-35	2

21. Find the surface area of a cone in which diameter of base is 8 cm and its slant height is 10 cm.

22. Differentiate right angled triangles and isosceles triangles.

23. Find the area and perimeter of a square with length 4 cm.

(5 × 6 = 30 marks)

Section C

*Answer any **two** questions.*
Each question carries 10 marks.

24. Find the volume of a cylindrical water tank whose base radius is 25 inches and height are 120 inches.

25. Find the quartile deviation for the following data :

Marks	Frequency
0-5	4
5-10	5
10-15	6
15-20	10
20-25	11
25-30	9
30-35	4
35-40	1

26. Explain the scope and limitations of statistics.

27. Find the volume and surface area of a sphere with diameter 18 cm.

$(2 \times 10 = 20$ marks$)$

D 11983

Name...

Reg. No...................................

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course [B.Sc. LRP (Alternate Pattern)]

A11—BASIC NUMERICAL SKILLS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 30.

1. What is power set ?

2. Find the power set of $A = \{1, 2, 3\}$.

3. what are the methods used for measuring seasonal variations ?

4. Represent the following frequency table by histogram :

Marks	10–15	15–20	20–25	25–30	30–35
Number of students	5	20	50	40	10

5. What is analysis of time series ?

6. Find the product of first five terms of GP, if the third term is 3.

7. What do you understand by classification of data ?

8. Solve $x^2 - 7x + 6 = 0$ by using quadratic formula.

9. Explain Kurtosis.

10. Find the product of first 9 terms of GP, if the 5th term is 2.

11. Find the mean of the following data.

    4, 40, 60, 20, 80, 10, 26, 12, 24, 12, 50

Turn over

12. Explain Skewness.

13. What is a pie diagram ?

14. Find the value of the determinant $\begin{vmatrix} 1 & 0 & 0 \\ 4 & 4 & 2 \\ 2 & 1 & 3 \end{vmatrix}$.

15. What is an index number ?

<div align="right">(10 × 3 = 30 marks)</div>

Section B (Paragraph)

Answer at least **five** *questions.*
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 30.

16. If the fifth and the tenth terms of a G.P are 32 and 1024 respectively, find the first term and the common ratio.

17. Give 3 yearly moving averages for the following series :

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Production (lakh tons) :	12.2	12.3	13.7	14.9	13.2	11.3	15.1	15.2	15.3	14.9

18. Find the sum of first 20 terms of the sequence 3, 6, 9, 12,....

19. Find the adjoint of the matrix $\begin{bmatrix} 1 & 1 & 2 \\ 0 & 1 & 3 \\ 0 & 0 & 1 \end{bmatrix}$.

20. Find the central tendencies for given series :

    28, 36, 34, 28, 48, 22, 35, 27, 19,41

21. Find AB, where $A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ 3 & 1 \end{bmatrix}$.

22. If $A = \{1, 2\}$ and $B = \{a, b, c\}$, find $A \times B$ and $B \times A$. Are they equal ?

23. What are the different aspects to be considered in planning a statistical enquiry ?

$(5 \times 6 = 30 \text{ marks})$

Section C (Essay)

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Find the sum of n terms of the series $8 + 88 + 888 + 8888 + \ldots$

25. Find the inverse of the matrix $\begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & 3 \\ 0 & 0 & 1 \end{bmatrix}$.

26. Solve the following by matrix method :

$$2x + 3y + 3z = 5$$
$$x - 2y + z = -4$$
$$3x - y - 2z = 3.$$

27. Find the quartile deviation for the following data :

Marks	Frequency
20–30	4
30–40	12
40–50	18
50–60	28
60–70	19
70–80	14
80–90	5

$(2 \times 10 = 20 \text{ marks})$

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course [B.Sc. L.R.P. (Alternate Pattern)]

A 12—PROFESSIONAL BUSINESS SKILLS

(2019—2020 Admissions)

Time : Two Hours and a Half   Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 30.

1. What is technical documentation ?

2. What is meant by professionalism ?

3. What is MOOC ?

4. What is data mining ?

5. What is social networking analysis ?

6. What is big data analysis ?

7. Who are digital natives ?

8. What is digital divide ?

9. What is cyber ethics ?

10. What is online advertising ?

11. What is green computing ?

12. What do you mean by e-mail etiquette ?

13. State any *two* features of new gen computers.

Turn over

14. What is artificial intelligence ?

15. What is PPC advertising ?

(10 × 3 = 30 marks)

Section B

Answer at least **five** *questions.*

Each question carries 6 *marks.*

All questions can be attended.

Overall Ceiling 30.

1. Write a note on information overload.

2. Explain the features of technical documentation.

3. Write a note on *e*-content development.

4. Explain the significance of business data analysis

5. Comment on the role of social networking analysis in business.

6. Discuss the consequences of cyber addiction.

7. Explain the features of green computing.

8. Explain the advantages of on-line advertising

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*

Each question carries 10 *marks.*

1. Define E-learning and discuss the major knowledge resources available for *e*-learning.

2. What is digital marketing? Explain the advantages and disadvantages of digital marketing.

3. Explain *e*-governance and discuss the major e- governance initiatives in India.

4. Discuss the qualities and traits required of a good professional.

(2 × 10 = 20 marks)

D 11981

Name..

Reg. No................................

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Common Course [B.Sc. L R P (Alternate Pattern)]

A11—BASIC NUMERICAL METHODS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 30.

1. What is Linear Equation ?

2. What is meant by quadratic equation ?

3. What is matrix ?

4. What is diagonal matrix ?

5. How do you calculate the sum of two matrices ?

6. What is Geometric Progression ?

7. What do you mean by series ?

8. What is real interest rate ?

9. Define EMI ?

10. Define harmonic mean ?

11. State any *two* desirable properties of a good average.

12. What do you mean by dispersion ?

13. Define standard deviation.

Turn over

14. State any *two* limitations of mean deviation.

15. What is kurtosis?

<div align="right">(10 × 3 = 30 marks)</div>

Section B

Answer at least **five** *questions.*

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. Solve $19x + 3x + 21 - 10x = 81$.

17. Solve the equation $x^2 + 5x - 14 = 0$.

18. Find the determinant of $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 4 & 3 \\ 6 & 1 & 2 \end{bmatrix}$.

19. Find the 14th term of Arithmetic progression : 1, 3, 5 ————.

20. Three numbers in ascending order in geometric progression such that their product is 1000. Find the middle number.

21. Calculate simple interest and amount at end of the 3rd year for Rs. 20,000 at 10 % per annum

22. Calculate Arithmetic mean from the following data :

Values	1	2	3	4	5	6	7	8
Frequency	3	5	6	11	9	6	5	3

23. Calculate median from the following :

    31, 14, 25, 18, 17, 26, 27, 23, 22.

<div align="right">(5 × 6 = 30 marks)</div>

Section C

Answer any **two** *questions.*

Each question carries 10 *marks.*

24. Solve the following equations by using Cramer's rule :

    $2x + 5y = 18$

    $3x + 2y = 16.$

25. Find compound interest for Rs. 8,000 for 3 years if interest is payable half yearly at 6 % P.a.

26. Find the 7th term and 10th term of the geometric progression 2, 4, 8.

27. Calculate Standard deviation and co-efficient of variation from the following values

Size	1	2	3	4	5	6	7	8
Frequency	1	3	4	6	9	7	3	2

    $(2 \times 10 = 20$ marks$)$

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L.R.P. (Alternate Pattern)

A 12—GENERAL INFORMATICS

(2017—2018 Admissions)

(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 12—GENERAL INFORMATICS

(Multiple Choice Questions for SDE Candidates)

1. VDU is also called :

    (A) Screen.   (B) Monitor.

    (C) Both (A) and (B).   (D) Printer.

2. Which of the following items is not used in Local Area Networks ?

    (A) Modem.   (B) Printer.

    (C) Computer.   (D) Cable.

3. The most flexible network topology is :

    (A) Ring.   (B) Star.

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

4. Data communication cable laying is not required when using :

    (A) Optical fibre.   (B) Coaxial fibre.

    (C) Microwave transmission.   (D) None of these.

5. A ————————— uses pictures (icons) and menus displayed on the screen to send commands to the computer system.

    (A) Command-based user interface.   (B) GUI.

    (C) System utility.   (D) None of these.

6. Which of the following is true ?

    (A) MP3 files contain audio data.

    (B) MP3 files are the only recognized format for digital audio.

    (C) Windows media player is able to organize large collections of audio files.

    (D) Only A and C are true.

7. With a podcast, you can :

    (A) Subscribe to video and audio content.

    (B) Have the most recent content "delivered" automatically.

    (C) Play the video and audio content on an MP3 player.

    (D) All of the above.

8. Infrared scanners cannot :

    (A)   Scan pages and detect unusual objects.

    (B)   Be worn on the wrist.

    (C)   Translate a bar code into a computer data file.

    (D)   Be used by shipping companies to track packages as they move around the world.

9. Robotic surgery devices help physicians because :

    (A)   They make more accurate incisions.

    (B)   The doctor does not have to be involved in the actual surgery.

    (C)   They monitor and make suggestive procedure.

    (D)   If runs into complications, they can suggest creative alternatives.

10. Knowledge based systems have been developed for fields such as :

    (A)   Financial markets.   (B)   Diagnosing diseases.

    (C)   Scheduling airplanes.   (D)   All of these.

11. Computer to computer exchange of business information is done through :

    (A)   CAM.   (B)   CAD.

    (C)   ERP.   (D)   EDI.

12. This is a satellite-based navigation system made up of a network of 24 satellite placed into orbit by the US Department of Defence.

    (A)   Bluetooth.   (B)   GPS.

    (C)   Infrared communication.   (D)   None of these.

13. GPS satellites circle the earth ————— times a day :

    (A)   Three times.   (B)   Two times.

    (C)   Six times.   (D)   Once in a month.

14. The knowledge that can be spoken in language and transmitted among individuals :

    (A)   General Knowledge.   (B)   Explicit knowledge.

    (C)   Tacit knowledge.   (D)   None of the above.

Turn over

15. Any symbol, logo, or name used to enable the public to identify the supplier of goods :

 (A) Patent.   (B) Copyright.

 (C) Trademark.   (D) None of the above.

16. This network is an autonomous Inter-University Centre of the University Grants Commission.

 (A) INFLIBNET.   (B) NICENET.

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

17. ——————— knowledge are also known as formal knowledge.

 (A) Explicit knowledge.   (B) Tacit knowledge.

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

18. This kind of crime is normally common in the financial institutions or for the purpose of committing financial crimes.

 (A) Data diddling.   (B) Salami attacks.

 (C) Virus attack.   (D) None of the above.

19. This refers to environmentally sustaining computing or IT.

 (A) Cloud computing.   (B) Green computing.

 (C) Electronic computing. (D) None of the above.

20. ——————— refers to unlawful acts wherein the computer is either a tool or target or both.

 (A) Cyber crime.   (B) Cyber ethics.

 (C) Cyber law.   (D) None of the above.

D 11804

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L. R. P. (Alternate Pattern)

A12—GENERAL INFORMATICS

(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

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

I. Choose the correct answer :

1   Restarting the system after it has been completed powered off is called :

    (a) A warm boot.

    (b) A standby start.

    (c) Hibernation.

    (d) A cold boot.

2   The term bandwidth refers to :

    (a) How much data can be sent through a connection ?

    (b) The amount of data in a multimedia file.

    (c) How fast your computer is ?

    (d) None of the above.

3   Baud rate means :

    (a) The rate at which data is transferred.

    (b) The rate at which data is processed.

    (c) The rate at which data is received from the modern.

    (d) None of these.

4   A kilobyte stores how many numbers of bytes ?

    (a) 1000.

    (b) 1024.

    (c) 1048.

    (d) 100.

5   What is an information ?

    (a) Raw data.

    (b) Processed data.

    (c) Collection of data.

    (d) None of these.

Turn over

II. Fill in the blanks :

    6 The name of the first digital computer is ——————.

    7 —————— developed the integrated circuits.

    8 ERP means ——————.

    9 The full form of EDI is ——————.

  10 TRIPS means ——————.

(10 × 1 = 10 marks)

Part B

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

11 What is LAN ?

12 What is a Blog ?

13 What is G2C interaction in e-governance ?

14 What is Bluetooth ?

15 What is NICENET ?

16 What is Google ?

17 What is Hacking ? What are the types ?

18 What is a Virus ?

19 What is Linux ?

20 What is FEDORA ?

(8 × 2 = 16 marks)

Part C

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

21 What is a Ring topology ? What are its advantages ?

22 Explain system software with examples.

23 Explain four disadvantages of *e*-governance.

24 Explain the uses of IT applications in business and commerce.

25 What is Infra-red communication ? What are its uses ?

26 Explain cloud computing. What are its types ?

27 What are the disadvantages of Linux ?

28 What is cyber ethics ?

(6 × 4 = 24 marks)

Part D

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

29 What are the uses of IT in teaching and learning ? Explain major IT tools in education.

30 What are cyber laws ? What are the major provisions included in the IT Act, 2000 ?

31 What is cyber addiction ? What are its symptoms ? What are the risks of cyber addiction ?

(2 × 15 = 30 marks)

D 11803

Name.......................................

Reg. No................................

THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L.R.P. (Alternate Pattern)

A 12—GENERAL INFORMATICS

(2014—2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

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

I. Choose the correct answer :

1   Computer confined their applications in which area of the following :

(a)   Education.

(b)   Entertainment.

(c)   Governance.

(d)   All the above.

2   Which of the following is not an example of software ?

(a)   MS office.

(b)   Chrome.

(c)   Tally.

(d)   ALU.

3   A collection of hyper linked document on the internet is called :

(a)   WWW.

(b)   Internet.

(c)   E-mail.

(d)   HTML.

4   The smallest unit of data in computer is :

(a)   Bit.

(b)   Nibble.

(c)   KB.

(d)   Bytes.

5   C, C++ and Java are ———— languages.

(a)   High-level.

(b)   Low-level.

(c)   Medium level.

(d)   None.

Turn over

II. Fill in the blanks :

6   ————Acts like a gatekeeper that examines each user's identification before allowing them to enter to the internal networks.

7   F4 key is meant for ——— voucher.

8   ——— is a set of standards or rules for exchanging information between computer system in a network.

9   MIS stands for ———.

10 LINUX is a type of ——— software.

(10 × 1 = 10 marks)

Part B

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

11 What is ROM ?

12 What is WWW ?

13 What is green computing ?

14 What is information overload ?

15 What do you mean by computer virus?

16 What is real time operating system ?

17 What is HTTP ?

18 What do you mean by modem ?

19 What is VLOG ?

20 Write the meaning of client server network.

(8 × 2 = 16 marks)

Part C

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

21 What are the benefits of E-Governance ?

22 What are the advantages of open source software ?

23 Explain the concept of digital divide ?

24 Distinguish between primary memory and secondary memory?

25 What are the limitations of a computer ?

26 Write a short note on INFLIBNET.

27 What are the business uses of an internet ?

28 Explain the basic features of NICENET.

(6 × 4 = 24 marks)

Part D

Answer any **two** *questions.*

Each question carries 15 *marks.*

29 What is EDI ? Explain its benefits and drawbacks.

30 What is a personal computer ? Write the important features of a computer system.

31 Explain the guidelines for the use of computer and internet.

(2 × 15 = 30 marks)

D 11802-A　　　　　　　　(Pages : 4)　　　　　　Name..

Reg. No...................................

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L.R.P. (Alternate Pattern)

A 11—BASIC NUMERICAL SKILLS

(2017—2018 Admissions)

(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. Which method is also known as tabular method ?

   (A) Roster method.   (B) Set builder form.

   (C) Both (A) and (B).   (D) None.

2. A set which is empty (or) consists of a definite number of elements is called :

   (A) Null set.   (B) Finite set.

   (C) Infinite set.   (D) None.

3. Which of the following are examples of null set ?

   (A) Set of even prime numbers.

   (B) Set of letters in English alphabets.

   (C) Set of odd natural numbers divisible by 2.

   (D) All the above.

4. In plane geometry, the set consists of all points in a plane is an eg. For :

   (A) $\cap$.   (B) $\cup$.

   (C) $\in$ (D) ϕ.

5. Value of the determinate $\begin{vmatrix} 2 & 1 & 3 \\ 4 & 2 & 6 \\ 6 & 3 & 9 \end{vmatrix}$ is :

   (A) 0.   (B) Positive integer.

   (C) Negative integer.   (D) Not obtainable.

6. A matrix with equal number of rows and colume is called :

   (A) Square matrix.   (B) Column.

   (C) Row.   (D) None.

7. The expression $b^2 - 4ac$ is called ———————— of the quadratic equation.

   (A) Discriminant.   (B) Roots.

   (C) Characteristics.   (D) Solution.

8. It is an equation is one or more variables where each terms degrees is not more than I is :

    (A) Simultaneous equation.   (B) Linear equation.

    (C) Equation.   (D) None.

9. Elimination by judicious multiplication is the other commonly used method to solve :

    (A) Simultaneous equation.   (B) Linear equation.

    (C) Simultaneous linear equation.   (D) None.

10. ——————— means to rewrite the quadratic equation into multiplication form.

    (A) Graphing.   (B) Completing the square.

    (C) Factoring.   (D) None.

11. A quadratic equation with real (or) complex co-efficients has 2 solutions called :

    (A) Roots.   (B) Equation.

    (C) Formula.   (D) None.

12. A series obtained by adding a constant number to its preceding terms is :

    (A) GP.   (B) AP.

    (C) GP or AP.   (D) None.

13. A sequence containing finite number of terms is called :

    (A) Finite sequence.   (B) Infinite.

    (C) Terms.   (D) None.

14. Find the 7th term of series 1, 4, 7 ——————.

    (A) 22.   (B) 19.

    (C) 16.   (D) 25.

15. d of the A.P. 4, $-$ 8, $-$ 20 ——————.

    (A) $-$ 4.   (B) 12.

    (C) $-$ 12.   (D) $-$ 8.

16. Find x if the number x ,7, 28 from a GP :

    (A)   4.

    (B)   0.

    (C)   7/4.

    (D)   4/7.

17. Sum of n terms of a G.P. is given by $a\dfrac{r^n - 1}{r - 1}$ where r is :

    (A)   Greater than 1.

    (B)   Equal to 1.

    (C)   Less than 1.

    (D)   Numerically greater than 1.

18. 9, 6, 4......................... is a ———————.

    (A)   A.P.

    (B)   G.P.

    (C)   A.P. or G.P.

    (D)   None.

19. The primary data are collected by :

    (A)   Interview.

    (B)   Observation.

    (C)   Questionnaire.

    (D)   All these.

20. ——————— is filled by the enumerator.

    (A)   Questionnaire.

    (B)   Schedule.

    (C)   Questionnaire or Schedule.

    (D)   All.

D 11802

Name..

Reg. No...................................

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L.R.P. (Alternate Pattern)

A11—BASIC NUMERICAL SKILLS

(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

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

I. Choose the correct answer :

1 A set 'A' is said to be a subset of a set B if every element of A is :

(a) Also an element of A.

(b) Also an element of B.

(c) Not an element of B.

(d) Not an element of A .

2 A ——————— is matrix which has only one column.

(a) Column.

(b) Row.

(c) Diagonal.

(d) Square.

3 The equations $x^2 + 4 = 0$ is a ———————.

(a) Quadratic equation.

(b) Cubic equation.

(c) Simple equation.

(d) None.

4 A series obtained by adding a constant number to its preceding terms is :

(a) GP.

(b) AP.

(c) GP or AP.

(d) None.

5 The primary data are collected by :

(a) Interview.

(b) Observation.

(c) Questionnaire.

(d) All these.

Turn over

II. Fill in the blanks :

6　Find the 7th term of series 1, 4, 7 ——————.

7　$A(B + C) = AB + AC$ is a —————— law.

8　$X^2 - 4 = 0$ implies x =.......

9　—————— is filled by the enumerator to collect primary data.

10　When mean is less than median and median is less than mode the distribution is said to be ——————.

(10 × 1 = 10 marks)

Part B

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

11　Define EQUAL SET and EQUIVALENT SET.

12　If A ={1, 3, 5, 7 }, B = { 5, 9, 13, 17 }, C = {1, 3, 9, 13 }, find :

(a) $A \cap B$; and $(A - B) - C$.

13　Solve $4(x - 2) + 5(x - 3) - 25 = x + 8$.

14　Two third of a number decreased by 2 equals 4. Find the number.

15　What is a geometric progression ?

16　Find the 12th term of an A.P. 6, 2, – 2.

17　What is tabulation ? What are the objectives ?

18　Calculate median : 25, 35, 15, 18, 17, 36, 28, 24, 22, 26.

19　What are the relative measures of dispersion or variability of data ?

20　Find the simple interest and amount for Rs. 50,000 at 7.5% p. a for 4 months.

(8 × 2 = 16 marks)

Part C

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

21　In a college there are 20 teachers, who teach Accountancy or Statistics. Of these 12, teach Accountancy and 4 teach both Statistics and Accountancy. How many teach Statistics ?

22 Find the value of a, b if :

$$2 \times \begin{bmatrix} a & 5 \\ 7 & b-3 \end{bmatrix} + \begin{bmatrix} 3 & -4 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 7 & 6 \\ 15 & 14 \end{bmatrix}.$$

23 Solve $3x + 4y = 7$, and $4x - 7 = 3$.

24 Find many two digit numbers are divisible by 3 ?

25 At what rate would a sum of money double in 20 years ?

26 Draw a Pie diagram for the following data :

Prime Cost	...	30%
Factory over Head	...	18%
Administrative overhead	...	28%
Selling and Distribution overhead	...	14%
Profit	...	10%

27 What is skewness ? What are the types of skewness ?

28 Find the H.M. of the series : 2, 3, 4, 5.

$(6 \times 4 = 24$ marks$)$

Part D

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

29 Find four numbers of A.P. whose sum is 20 and the sum of whose square is 120.

30 Following are the data related with the prices and quantities consumed for 2010 and 2012. Construct price index numbers by : (1) Laspeyre's method ; (2) Paasche's method ; (3) Bowly's - Dorbish method ; and (4) Fisher's method.

Commodity	2010		2012	
	Price	Quantity	Price	Quantity
Rice	5	15	7	12
Wheat	4	5	6	4
Sugar	7	4	9	3
Tea	52	2	55	2

31 Compare primary data and secondary data. What is a questionnaire ? What are the essentials of a good questionnaire.

$(2 \times 15 = 30$ marks$)$

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION
NOVEMBER 2021

B.Sc. L. R. P. (Alternate Pattern)

A 11—BASIC NUMERICAL SKILLS

(2014—2016 Admissions)

(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 square matrix in which elements in the diagonal are 1 and rest is all zero is called :

    (A) Diagonal matrix.

    (B) Zero matrix.

    (C) Identity matrix.

    (D) None.

2. The solution of the equation $4 = 2/3\ x$ is ——————.

    (A) 6.

    (B) 12.

    (C) 8.

    (D) 16.

3. A sequence is called infinite if it is not a :

    (A) Finite sequence.

    (B) AP.

    (C) Progressions.

    (D) None.

4. If $2, x, 8$ are the successive terms of a GP. The value of x is :

    (A) 5.

    (B) 4.

    (C) – 4.

    (D) ± 4.

5. The sum at the end of 2 years for 1000 at 10% p.a. compounded yearly :

    (A) 100.

    (B) 210.

    (C) 1100.

    (D) 1210.

6. Compound interest for Rs. 25,000 at the rate of 12% p. a. for 5 years is :

    (A) 17623.

    (B) 44058.

    (C) 19058.

    (D) 15000.

7. Tabulation is the presentation of data in :

    (A) Groups.

    (B) Rows.

    (C) Columns.

    (D) Rows and columns.

8. The process of arranging data in groups according to similarities in character is called :

    (A) Tabulation.

    (B) Classification.

    (C) Tabulation or classifaction.

    (D) None.

9. Bar diagrams are :

    (A) One dimensional.   (B) Two.

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

10. The number of observations corresponding to a particular class is known as ——————.

    (A) Class Limit.   (B) Class boundary.

    (C) Class interval.   (D) Frequency.

11. Histogram is a :

    (A) Graph.   (B) Diagram.

    (C) Collection of bars.   (D) Pictogram.

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

    (A) Attributes.   (B) Class Intervals.

    (C) Time.   (D) Area.

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

    (A) Set.   (B) Average.

    (C) Interest.   (D) Matrices.

14. The second quartile is equal to :

    (A) Mean.   (B) Median.

    (C) Mode.   (D) Standard Deviation.

15. The points of intersection of the less than and more than ogive corresponds to :

    (A) Mean.   (B) Median.

    (C) Geometric Mean.   (D) Harmonic mean.

16. Index numbers are :

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

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

17. For a normal distribution, $Q_3 + Q_1 - 2$ Median = —————.

    (A) 2.

    (B) 1.

    (C) 3.

    (D) 0.

18. 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.

19. Co-efficient of standard deviation is :

    (A) SD / Mediam.

    (B) SD / Mean.

    (C) SD/ Mode.

    (D) AM / SD.

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

    (A) 200.

    (B) 50.

    (C) 1.

    (D) 100.

THIRD SEMESTER (CUCBCSS–UG) DEGREE EXAMINATION NOVEMBER 2021

B.Sc. L R P (Alternate Pattern)

A11—BASIC NUMERICAL SKILLS

(2014—2016 Admissions)

Time : Three Hours   Maximum : 80 Marks

Part A

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

I.   Choose the correct answer :

1   $x = 4 + 8y$ is ——————.

    (a)   Quadratic.   (b)   Linear.

    (c)   Exponential.   (d)   None of the above.

2   When A = {1, 2, 3} its power set has ——————— Elements.

    (a)   2.   (b)   4.

    (c)   6.   (d)   8.

3   When all observations occur with equal frequency —————— is ill defined.

    (a)   Mean.   (b)   Median.

    (c)   Mode.   (d)   None.

4   Histogram is a ————.

    (a)   Graph.   (b)   Diagram.

    (c)   Pictogram.   (d)   None.

5   —————— is a one-dimensional diagram.

    (a)   Bar Diagram.   (b)   Line Diagrams.

    (c)   Both a & b.   (d)   None of the above.

Turn over

Fill in the blanks :

1

6　Value of the determinant of $\begin{vmatrix} 2 & 4 \\ 8 & 2 \end{vmatrix}$ is ——————.

]

7　What sum of money invested at 4% Simple interest will amount to Rs. 510 in 6 months ——————.

8　Find Harmonic Mean. 3, 4, 5, 6 ——————.

9　In the relation R = $\{(1, 1) (4, 2) (16, 4)\}$ Range of the relation is ——————.

10　If A = $\{1, 2, 3\}$ and B = $\{1, 2, 3\}$ then A $\cup$ B is ——————.

(10 × 1 = 10 marks)

Part B

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

11　If A = $\{1, 4, 7, 10\}$ B = $\{2, 4, 5, 8\}$ U = $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ Find A'∩B.

12　Represent A' by using venn diagram

13　If A = $\{5, 8\}$ B = $\{4, 5\}$ Find B × A.

14　Find A + 4B :

$$A = \begin{pmatrix} 2 & 3 & 1 \\ 0 & -1 & 5 \end{pmatrix} B = \begin{pmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{pmatrix}.$$

15　Find the value of determinants :

$$A = \begin{vmatrix} 5 & 7 & 2 \\ 2 & 3 & 1 \\ 4 & 6 & 2 \end{vmatrix}.$$

16　Solve the equation $y^2 - 10y + 9 = 0$.

17　Solve $8x + 7y = 10$
$11x + 10y = 10.$

18 n^{th} term of a sequence is given by $a_n = 4_n + 7$. List the first *four* terms of the sequence.

19 Find the compound interest for Rs. 7000 for 4 years if interest is payable half yearly at 6% p.a.

20 Calculate geometric mean from the following figures 57.5, 87.75, 53.5, 73.5, 81.75.

(8 × 2 = 16 marks)

Part C

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

21 What do you mean by Lorenz Curve ? What are its uses ?

22 Define Index numbers. Explain the characteristics of Index numbers.

23 Calculate the mean and standard deviation for the following table giving the age distribution of 542 members :

Age in years	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of members	3	61	132	153	140	51	2

24 State the differences of Mean Median and Mode. How do you choose an appropriate average.

25 Prove that $A \cap (A \cup B) = A \cup (A \cap B)$ by means of Venn diagram.

26 Solve $9x + 3y - 4z = 35$
$x + y - z = 4$
$2x - 5y - 4z = -48.$

27 Find the 10th term of GP $-\dfrac{3}{4}, \dfrac{1}{2}, -\dfrac{1}{3}, \dfrac{2}{9}$ ....

28 Given that $A + B = \begin{pmatrix} 2 & 5 \\ 7 & 8 \end{pmatrix}$ $A - B = \begin{pmatrix} 6 & 8 \\ 4 & 3 \end{pmatrix}$. Find 2A.

(6 × 4 = 24 marks)

Turn over

Part D

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

29 Out of 1200 students appeared for B.Com examination, 750 failed in accountancy, 600 failed in Business organization and 600 failed in costing. 450 failed in both accountancy and business organization, 400 failed in both accountancy and costing, 150 failed in business organizations and costing and 20 failed in all subjects. How many students passes all three subjects ?

30 Solve the following equations by using matrices :

$$5x - 6y + 4z = 15$$
$$7x + 4y - 3z = 19$$
$$2x + y + 6z = 46.$$

31 Find Fisher's Index Number from the following data :

Commodity	2005		2008	
	Price	Quantity	Price	Quantity
A	2	74	3	82
B	5	125	4	140
C	7	40	6	33

(2 × 15 = 30 marks)