

Total No. of Pages : 02

Total No. of Questions : 07

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

- 1) Write briefly :
 - a) Write difference between algorithm and flowchart.
 - b) Explain in brief about library functions.
 - c) Explain the term identifiers with example?
 - d) Write the syntax for do-while loop.
 - e) Explain the syntax of If-else statement.
 - f) List various string functions.
 - g) Explain actual and formal parameters.
 - h) Write the advantages of functions.
 - i) List various File Operations.
 - j) What are pointers? When and why they are used?



1 | M- 76963

(53)-1553

SECTION - B

2. Write a detailed note on different types of Data Types available in C.
3. **Write a detailed note on the following :**
 - a) Pseudo code and Algorithms.
 - b) Relational and conditional operators.
4.
 - a) Explain formatted input and output with examples.
 - b) Explain the use of Switch statement with a suitable C program.
5.
 - a) What is an array? What are the merits and demerits of array in C? Differentiate between one dimensional and two dimensional arrays with suitable example.
 - b) Write a program to compute the sum of diagonal elements of a square matrix.
6.
 - a) Write a C program* to find the factorial of given number using function.*
 - b) Differentiate between call by value and call by reference.
7.
 - a) What is structure? How can we access element of a structure?
 - b) What is union? Mention its advantages. Also, differentiate between structure and union with suitable example.

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2 | M-76963

(S3)-1553

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)
ENVIRONMENTAL STUDIES

Subject Code : EVS-102-18

M.Code : 77421

Date of Examination: 02-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a) Decomposers
- b) Climate Change
- c) Food Web
- d) Biodiversity
- e) Rain Water Harvesting
- f) Ecosystem
- g) Ecological Pyramid
- h) Wind Energy
- i) Cyclones
- j) Acid Rain



SECTION - B

2. Why India is known as Mega Biodiversity Nation? Discuss in detail.
3. Discuss Forest Ecosystem and explain its significance in details.
4. What do you understand by Global Warming? How it affects life on earth?
5. Why we need water conservation today? Discuss various methods of water conservation.
6. What are the various causes of Land degradation? Discuss its effects.
7. Discuss in details various alternate sources of energy to address energy crisis.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)
OBJECT ORIENTED PROGRAMMING USING C++

Subject Code : UGCA-1909

M.Code : 77417

Date of Examination: 28-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Explain briefly :

- a) Distinguish between Dynamic binding and message passing.
- b) Explain use of friend function with the help of suitable example.
- c) What is the need of inheritance?
- d) Write difference between object oriented programming and procedure oriented programming.
- e) Define polymorphism.
- f) Explain how to write a file?
- g) State the use of scope resolution operator and its use in C++.
- h) What is virtual keyword used for?
- i) What are rules for overloading operators?
- j) Explain early binding.



SECTION - B

2. a) Discuss member functions.
b) When is an object created and what is its lifetime?
3. What is inheritance? What are different types of inheritance? Explain multiple inheritances with example.
4. a) What do you mean by type conversion? Give an example of basic to object conversion.
b) Explain abstract classes.
5. Explain Virtual functions with example. What is the difference between static & dynamic binding?
6. a) What is difference in multiple and multilevel inheritance?
b) What function can be used to open a file in C++?
7. What do you mean by operator overloading and method overloading? Write a distance class which contains data members of distance in meters, centimeters and millimeters. The class must have overloaded operators for addition + and subtraction- respectively.

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Total No. of Questions : 07

Total No. of Pages : 02

Subject Code : UGCA-1908

M.Code : 77416

Date of Examination : 24-05-2025

Time : 3 Hrs.

Max. Marks : 60

SECTION-B

2. What are logic gates? Explain different logic gates with their truth tables and diagram.
3. Explain the SOP and POS forms with suitable examples.
4. Explain the working of a Full Adder with a logic diagram and truth table.
5. Discuss the Master-Slave JK Flip-Flop and how it eliminates the race-around condition.
6. Write a detailed note on RISC and CISC Architecture.
7. Explain the 16-bit Common Bus System with a neat diagram.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

- I. Write briefly:
 - a) What is a Universal Gate? Give examples.
 - b) State and prove De Morgan's theorems.
 - c) Explain the importance of K-map in Boolean algebra.
 - d) Define a Half Adder and write its Boolean expression.
 - e) What is the function of a multiplexer in digital circuits?
 - f) What are the limitations of RS flip-flop?
 - g) Write the differences between latches and flip flops?
 - h) Differentiate between Harvard and Von Neumann architecture.
 - i) What are Memory Reference Instructions? Give an example.
 - j) Define Control Bus and Data Bus with their significance.



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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)
FUNDAMENTALS OF STATISTICS
Subject Code : UGCA-1907
M.Code : 77415
Date of Examination : 21-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A**1. Write briefly:**

- a. Statistics
- b. Primary and secondary data
- c. Histogram
- d. Objectives of tabulation
- e. Rounding off data
- f. Range and its Coefficient
- g. Standard deviation
- h. Continuous frequency distribution
- i. Geometric mean
- j. Mode

**SECTION - B**

2. Discuss scope and limitation of statistics.
3. What are the different methods of collecting primary data? Explain any two methods with their merits and demerits.
4. What do you mean by diagrammatic representation of data? Discuss its utility. What are the advantages and disadvantages of using diagrams for the presentation of data?
5. Calculate Mean and Median for the following data :

Marks: Below	20	30	40	50	60	70	80	90
No. of students:	4	16	56	97	124	137	146	150

6. Calculate range and standard deviation for the following:

Weight (in kgs)	44-46	46-48	48-50	50-52	52-54
No. of persons:	3	24	27	21	5

7. a) Following is the data about the market share of four brands of TV sets sold in Amritsar. Present the data by a pie diagram:

Brands of TV sets	Samsung	LG	Onida	Sony
Units sold in Amritsar	625	500	438	312

- b) Draw more than type Ogive for the following data:

Weight (in kgs)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of students	3	5	9	12	5	4	2

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem-4)
OPERATING SYSTEMS
Subject Code : UGCA-1923
M.Code : 79727
Date of Examination : 23-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Answer briefly :

- a) List various views of Operating system.
- b) Define the term long term scheduler.
- c) Differentiate between Program and Process.
- d) Define the term address binding.
- e) Write advantages of Virtual Memory.
- f) Explain the need of Page Replacement.
- g) List various File Operations.
- h) Define the term Disk Bandwidth.
- i) What are the two main components of a Real Time Operating System?
- j) Why is synchronization important in multiprocessor Operating systems?



SECTION-B

2. Write a detailed note on Structure of Operating System.
3. Explain in detail about Process Synchronization.
4. Write a detailed note on Segmentation Scheme of Memory Management.
5. Write a detailed note on Memory Sharing and Protection.
6. Write a detailed note on Device drivers.
7. Write a detailed note on Distributed Operating System Characteristics, architecture and Issues.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem-4)
DATABASE MANAGEMENT SYSTEMS
Subject Code : UGCA1922
M.Code : 79726
Date of Examination : 20-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a. Define view level.
- b. Limitations of hierarchical data model.
- c. Difference between alter and update.
- d. List the two DDL statements.
- e. Why do we need Normalization?
- f. What is cursor?
- g. Define the term functional dependence.
- h. What is log base recovery?
- i. What is the difference between authorization and authentication?
- j. List the different file operations.



SECTION - B

2. Discuss data redundancy, data inconsistency, data integrity, security and concurrent access.
3. Discuss Hierarchical, Network, Relational and Object-Oriented Models.
4. Why do we need the concept of keys in DBMS? Discuss Primary Key, Candidate Key, Foreign Key, Super Key and Composite Key with the help of suitable example.
5. Discuss how normalization removes redundancy and improves data integrity. Explain 1NF, 2NF and 3NF.
6. What are joins in SQL? Explain the different types of joins with examples.
7. What is concurrency control? Explain the different concurrency control techniques.

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem-4)
SOFTWARE ENGINEERING
Subject Code : UGCA1921
M.Code : 79725
Date of Examination : 06-05-2025

Time : 3 Hrs.

Max. Marks : 60

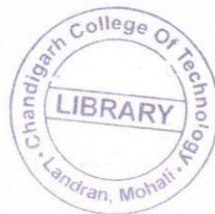
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Define Software Engineering and explain its need.
- b) What are Specialized Process Models? Give an example.
- c) Explain the role of a system analyst.
- d) What are functional and non-functional requirements?
- e) Define cohesion and coupling in software design.
- f) What are the characteristics of a good software design?
- g) Differentiate between unit testing and integration testing.
- h) What is Software Reengineering?
- i) Explain in brief about Software Measurement.
- j) Define a decision tree and a decision table.



SECTION-B

2. Write a detailed note on Spiral model along with its advantages and disadvantages.
3. Discuss Software Requirement Specification (SRS) and its essential properties.
4. Explain structured analysis and function-oriented design in detail.
5. What are software testing fundamentals? Explain system testing in detail.
6. Explain in detail about Metrics for Testing and Metrics for Maintenance.
7. Write a detailed note on Software Cost Estimation.

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Roll No.

Total No. of Pages 02

Total No. of Questions : 07

BCA (Sem.-6)
ANDROID PROGRAMMING
Subject Code : UGCA-1943
M.Code : 91681
Date of Examination : 05-05-2025

Time : 3 Hrs.

Max. Marks : 60

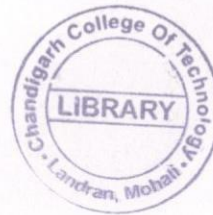
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Answer briefly :

- a) Explain with example the need and significance of Async tasks.
- b) What is the significance of the term 'interaction among activities'?
- c) Explain explicit intent.
- d) What do you mean by term availability?
- e) Define debugging.
- f) Explain term activity.
- g) Why security feature is required in mobile applications?
- h) What do you mean by default resources?
- i) What is the future of an android OS?
- j) What is the importance of design principles?



SECTION-B

2. What do you mean by enterprise requirements in mobile applications? Explain in detail.
3. Explain characteristics and applications of mobile applications.
4. What do you mean by integrated cloud services? Explain in detail.
5. Explain in detail the architecture of Android OS.
6. Explain white box testing and black box testing with suitable examples.
7. What do you mean by Mobile Software Engineering? Explain in detail.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-06)

DIGITAL MARKETING

Subject Code : UGCA-1947

M.Code : 91691

Date of Examination : 19-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a. Explain the keywords analytics tool.
- b. What is Video marketing?
- c. Define Content marketing.
- d. Describe Facebook Marketing.
- e. Role of Search Engine result page.
- f. Off-site marketing.
- g. What is the need of Web analytics?
- h. Need of Keywords for SEO.
- i. What is Sponsorships marketing?
- j. Explain Social media optimization.



SECTION - B

2. Elaborate in details the influencer marketing, affiliate marketing, viral marketing and referral marketing.
3. Describe the concept of social media marketing. What are the different types of SMM and their features?
4. What is mobile marketing and its role for marketers? What is online advertising and its advantages?
5. Describe the importance of internet and search engine. What is the role of keywords for SEO?
6. Discuss how on-page SEO is different from Off-page SEO? Explain the strategies of Off page SEO.
7. Explain the role of website for online marketing. What is the process of website development for marketing purpose?

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

BCA (Sem.-6)
MACHINE LEARNING
Subject Code : UGCA1950
M.Code : 91697

Date of Examination : 22-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly :

- a) List some real-world application of machine learning.
- b) Significance of Gradient Descent in Machine Learning.
- c) What is decision tree?
- d) Define false positive and false negative for classification problem.
- e) What is hierarchical clustering?
- f) Define Reinforcement learning.
- g) What is Naïve Bayes Classifier?
- h) What is Exploitation Dilemma in Reinforcement learning?
- i) What is importance of hyperparameter optimization?
- j) What are Q values?



SECTION-B

2. Explain the Machine Learning process flow with a real-world example.
3. Discuss Support Vector Machines (SVM) with an example and explain how they separate data points?
4. Explain Hierarchical Clustering with its working mechanism and how it differs from K-means clustering?
5. Discuss the role of a values in Reinforcement Learning and their impact on learning rate.
6. Define the Markov Decision Process (MDP) and describe its key components.

SECTION-C

7. Compare and contrast different types of Machine Learning (Supervised, Unsupervised, and Reinforcement Learning) with suitable examples.
8. Discuss Decision Trees, Random Forest and Naïve Bayes classifiers in terms of their advantages, disadvantages and real-world applications.
9. **Write a short note on :**
 - a) Grid Search VS Random Search.
 - b) C Means algorithm.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-6)
INFORMATION SECURITY
Subject Code : UGCA1948
M.Code : 91695
Date of Examination : 29-05-2025

Time : 3 Hrs.

Max. Marks : 60

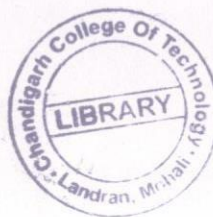
INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly:

- a) Explain the basic function of the DES algorithm in encryption.
- b) What are the key characteristics of a "good" encryption algorithm?
- c) What are viruses, and how do they differ from other forms of malicious code?
- d) What is the role of intrusion detection systems (IDS) in securing networks?
- e) What makes a network Vulnerable?
- f) What is multilevel security?
- g) How does secure email encryption protect the confidentiality of communications?
- h) What is the role of an organization's security policy?
- i) What are the roles of employee?
- j) What are the some common examples of cybercrimes?



SECTION-B

2.
 - a) What is computer security and why is it essential for protecting digital assets?
 - b) What is elementary cryptography and how does it contribute to securing communications and data?
3.
 - a) Discuss the role of digital signatures in public key cryptography and their importance in verifying identities.
 - b) What are non-malicious program errors and how can they potentially lead to security vulnerabilities in software systems?
4.
 - a) Explain the concept of file protection mechanisms in an operating system. How do they prevent unauthorized access to critical system files?
 - b) What are the key principles behind designing a trusted operating system, and what features are essential for its security?
5.
 - a) What are sensitive data types in databases and why is their protection critical for maintaining privacy and T security?
 - b) What is a firewall and how does it help in securing a network from unauthorized access?
6.
 - a) Explain the process of risk analysis in security management. How does it help organizations assess vulnerabilities and mitigate potential threats?
 - b) What ethical issues arise in computer security, and how should professionals address these issues in their work?
7. Analyze a famous case of data breach (e.g., Equifax or Target) and explain how the breach could have been avoided with proper security planning.

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BBC (IT) / BCA (Sem.-06)
SOFTWARE PROJECT MANAGEMENT
Subject Code : UGCA 1957
M.Code : 93688
Date of Examination : 10-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) What is baseline?
- b) What are formal technical reviews?
- c) What is issue resolution?
- d) What is use case points approach?
- e) What is defect prevention?
- f) What is audit control?
- g) Differentiate between process and project.
- h) What is process monitoring?
- i) What is project tracking?
- j) Mention different team structures.



SECTION - B

2. Differentiate between Verification and Validation.
3. Explain the project management process in detail. What is significance of Capability Maturity Model?
4. Explain risk assessment and risk control in detail.
5. Compare and contrast the bottom up and top down estimation approaches.
6. **Write notes on:**
 - a) Quality Management
 - b) Project Closure Analysis
7. What do you understand by change management? Explain software configuration management in detail.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-5)
INTERNET OF THINGS
Subject Code : UGCA-1933
M.Code : 90316
Date of Examination : 19-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :
- Define term embedded system.
 - What is the role of communication protocols in IoT systems?
 - What is the role of an IoT system in today's era?
 - What do you mean by term M2M?
 - "IoT solutions are self-configuring"*, what is the meaning of term self-configuring here.
 - Define CoAP.
 - What is significance of Exclusive pair in IoT communication model?
 - Explain role of IoT systems in transportation.
 - Define Raspberry PI.
 - What is the usage of M2M gateway?



SECTION - B

2. Explain different levels of IoT in detail with the help of suitable example.
3. What do you mean by IoT enabled technologies? Explain IoT enabled technologies in detail.
4. Explain IoT design methodology in detail with suitable examples.
5. Explain Domain specific IoTs City and Environment.
6. What do you mean by security management? Explain how security management is important and necessary in an IoT system.
7. Explain cloud storage models and communication APIs.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-5)
PROGRAMMING IN PHP
Subject Code : UGCA1929
M.Code : 90312

Date of Examination : 17-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a) Explain any three string functions in PHP with syntax.
- b) Explain any three Date Time functions in PHP.
- c) Explain any two types of array available in PHP.
- d) What is the difference between local and global variables?
- e) Define static variables.
- f) Why PHP is known as scripting language?
- g) Write a program in PHP to calculate the square root of a number.
- h) Create links in PHP.
- i) Write short note on super global array.
- j) Write PHP statements to insert data into MySQL table.

SECTION - B

2. Write a PHP program to display book details in a library.
3. Discuss the role of PHP in web development. Explain Looping statements available in PHP with example.
4. What is the process for connecting to MySQL database in PHP? Explain with suitable example.
5. Create a registration form in PHP using text boxes, buttons, radio-buttons and checkboxes?
6. Explain file handling in PHP.
7. Explain how functions are defined and different ways of passing arguments?



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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA/B.Sc. (IT) (Sem.-3)
PROGRAMMING IN PYTHON
Subject Code : UGCA-1914
M.Code : 78180
Date of Examination : 20-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Name three limitations of Python.
- b) How do you set up environment variables for Python?
- c) What is exception handling in Python?
- d) Give an example of a real-world application of Python.
- e) Name three native data types in Python.
- f) What does the range() function do in Python?
- g) What is an anonymous function in Python?
- h) How do you define a user-defined function in Python?
- i) What is the purpose of directories in Python?
- j) What is file encoding and why is it important?



SECTION-B

2. Provide an in-depth analysis of Python's applications across various domains, highlighting specific examples and discussing its advantages over other programming languages in these contexts.
3. Explain the concept of control structures in Python, discussing how they enable the flow of program execution. Provide examples of conditional statements, loops and function calls to illustrate their usage.
4. Investigate the features and usage of dictionaries in Python, emphasizing their key-value pair structure and efficient data retrieval capabilities. Provide examples to illustrate dictionary operations, including adding/removing items, accessing values and iterating through key-value pairs.
5. Compare and contrast pass by value and pass by reference in Python, explaining how arguments are passed to functions and how changes made to mutable objects within functions can affect the original objects. Provide examples to demonstrate the differences between pass by value and pass by reference.
6. Explain the process of working with files in Python, including file, opening, reading, writing, and closing operations. Describe various file opening and discuss their respective purposes and behaviors. Additionally, discuss file attributes such as mode, name, closed, and encoding and demonstrate how to access them using file object attributes.
7. Explore garbage collection in Python, explaining how it manages memory by automatically reclaiming unused objects to free up system resources. Discuss the garbage collection mechanisms used in Python, including reference counting and cyclic garbage collection, and explain how they work to identify and remove unreachable objects from memory. Additionally, discuss techniques for controlling garbage collection behavior and optimizing memory usage in Python programs.

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Total No. of Pages : 02

Date of Examination : 18-06-2025

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

1. Write briefly :

- a. Digital
- b. Synchronous
- c. Half-duplex
- d. LAN
- e. Optical fiber
- f. Attenuation
- g. TDM
- h. IEEE 802.4
- i. Congestion
- j. UDP



2. Write a note on SLIP and PPP.
3. What is Multiplexing? Explain its types, merits and demerits.
4. Define routing. Explain any one algorithm of routing.
5. Write a note on flow control and buffering.
6. Explain the various wireless transmission techniques.
7. Discuss the various issues in session and presentation layer.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-3)
PC ASSEMBLY & TROUBLESHOOTING

Subject Code : UGCA-1919

M.Code : 78185

Date of Examination : 25-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**
 - a) What is the purpose of a north-bridge and south-bridge on PC motherboard?
 - b) What is a HW interface port?
 - c) Define the terms PC-AT, PC-XT and give their origin in personal computing devices.
 - d) Define and differentiate personal computer, mini-computer, main-frame and super computers.
 - e) What is BIOS and discuss different types of BIOS?
 - f) What are inputs and output hardware ports and their applications?
 - g) What is hardware virtualization? Justify with example.
 - h) What do you mean by POST and booting of a system?
 - i) Differentiate by working of line printers, dot-matrix, inkjet and LaserJet printers.
 - j) What is the difference between in a LaserJet printer and a flatbed scanner?



SECTION-B

2. Define Operating System. Give introduction of different versions of Windows for PCs.
3. What is a Master Boot Record (MBR), Discuss its working and importance? How it is used in Windows 10 and 11 operating systems?
4. How an HDD is partitioned and why? Discuss and explain the disk partitioning process. How many primary disk drives required installing an operating system?
5. What do you mean by utility software? How these are different than device drivers? How HP printers and scanner drivers are installed if not provided with the respective device?
6. What is a motherboard? What is the main difference between desktop and laptop motherboards? Discuss main I/O ports and interface controllers on a motherboard.
7. Give introduction of 8085 μ Processor. Compare it with other intel based 32-bit and 64-bit processors with main features of each.

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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (G & W.D / I.T) / BCA (Sem.-3)

DATA STRUCTURES

Subject Code : UGCA-1915

M.Code : 78181

Date of Examination : 23-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :
 - a. Data Structures
 - b. Strings
 - c. Hashing
 - d. Sparse Matrix
 - e. Binary Search Tree
 - f. CRT
 - g. Dangling Pointer
 - h. Small 'o' Notation
 - i. Queue
 - j. Heap



SECTION - B

2. What is a pointer? How dynamic memory is allocated?
3. Give an example of postfix expression. How to evaluate it using stacks?
4. Differentiate between bubble, selection and insertion sorting.
5. Write a note on AVL tree and B-Trees.
6. What is a linked list? Write algorithm to insert a node in doubly linked list.
7. How graph is represented in adjacency matrix? Write the applications of graphs

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Total No. of Questions : 07

Total No. of Pages : 02

Bachelor of Computer Applications (Sem.-5)

COMPUTER GRAPHICS

Subject Code : UGCA1934

M.Code : 90317

Date of Examination : 01-07-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :
 - a) What is a Graph?
 - b) What are the advantages of using a trackball over a traditional computer mouse?
 - c) What is a lookup table in computer graphics?
 - d) Define scan conversion.
 - e) Write a transformation matrix for reflection about a line inclined at 45 degrees to the x- axis.
 - f) Write and explain the mathematical equation used for the DDA line drawing algorithm.
 - g) What is clipping?
 - h) Write equations for 3-D translation, rotation, and scaling operations.
 - i) What is persistence? How is it related to refreshing?
 - j) What do you mean by shading of objects?



SECTION - B

2. What are video display devices? Explain with the help of a neat diagram the working of a Cathode Ray Tube.
3. Write down the steps used for the Mid-Point circle generation algorithm. Also, explain how successive decision parameter equation is derived for the Mid-Point circle algorithm.
4. Perform a 45-degree rotation of a triangle with vertices A (0, 0), B (1, 1), C (5, 2). About:
 - a) The origin
 - b) About point P (-1, -1).
5. Write a note on filling techniques. Compare and contrast flood fill and boundary fill methods.
6. Describe the working of the Liang-Barsky line clipping algorithm. How is this algorithm more efficient than the Cohen-Sutherland line clipping algorithm?
7. Write down the equations for 3-D translation, rotation, and scaling operations. Drive a 3-D transformation matrix for rotating an object by an angle θ degree in the direction of the Y-Z plane.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Computer Applications (Sem.-6)

CYBER LAWS & IPR

Subject Code : UGCA1949

M.Code : 91696

Date of Examination : 03-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Explain the use of web technology in Cyber Law.
- b) What is the significance of Jurisdiction in Cyber Law?
- c) Define the term Cyber Stalking.
- d) What is Cyberspace?
- e) What is Hacking?
- f) What is a copyright? What are its characteristics?
- g) What do you mean by Open Source Software?
- h) What do you mean by Rights of Patent?
- i) Explain the importance of Trademark.
- j) List the steps to Register the Trademark.



SECTION-B

2. What is Jurisprudence? Explain the types of Jurisdictions under IT Act 2000.
3. What is trademark, types of trademark and explain how the trademark is protected?
4. Explain in detail different types of IPRs in India and abroad.
5. What is privacy Threat on Internet? Explain the self regulation approach to privacy.
6. What do mean by Digital forgery? Explain the ethics and Etiquettes of cyber world.
7. Explain the different forms of Cyber Defamation and Cyber Terrorism.

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Roll No.

Total No. of Pages :02

Total No. of Questions : 07

B.Sc. (Graphics & Web Designing) /(IT)/BCA(Sem.-1)

FUNDAMENTALS OF COMPUTER AND IT

Subject Code :UGCA 1902

M.Code :76962

Date of Examination :16-01-2026

Time : 3 Hrs.

Max. Marks : 60



INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a) Differentiate between data and information.
- b) Define OCR and OMR.
- c) What is the role of registers in CPU?
- d) Write two applications of hexadecimal number system.
- e) Convert $(256)_{10}$ into binary.
- f) What are utility programs? Give two examples.
- g) Mention two differences between Word and Spreadsheet.
- h) Define replication in MS Excel.
- i) What is a digital signature?
- j) Name any two applications of embedded systems.

SECTION - B

2. Describe the various input and output devices. Explain with diagrams the working of scanner, bar code reader and plotter.
3. Perform the following binary operations :
 - a) $(1101)_2 + (1011)_2$
 - b) $(10101)_2 - (1100)_2$
 - c) $(111)_2 \times (101)_2$Also, explain the significance of binary representation in computers.
4. What are the features of MS Word? Explain editing, formatting, table handling and equation editor with examples.
5. Explain different types of cell references in spreadsheets with suitable examples.
6. Discuss the working of Secure Electronic Transaction (SET). How is it different from Electronic Fund Transfer (EFT)?
7. What is Big Data? Explain its features (Volume, Velocity, Variety, Veracity, Value) and applications in real life.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-1)
MATHEMATICS

Subject Code : UGCC2501

M.Code : 95410

Date of Examination : 15-01-2026

Time : 3 Hrs.

Max. Marks : 60

SECTION - B

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a) Write the following set in the roster form

$$A = \{x : x \in \mathbb{R}, 2x + 11 = 15\}.$$

- b) State De' Morgans Law.

- c) What is the symbol of disjunction?

- d) Define Scalar Matrix with the help of example

- e) Find the n^{th} term of the A.P. 5, 11, 17, 23,....

- f) Find the adjoint of the matrix $\begin{bmatrix} 2 & 3 \\ -4 & -6 \end{bmatrix}$.

- g) Write the general form of the Geometric progression.

- h) What do you mean by Singular Matrices?

- i) What do you mean by Disjoint sets? Give one example

- ii) Explain conditional statement with the help of example

2. a) Show that the following proposition is tautologies

$$\{(P \vee \sim Q) \wedge (\sim P \vee \sim Q)\} \vee Q$$

- b) Show that $p \Rightarrow (q \Rightarrow r) = (p \wedge q) \Rightarrow r$.

3. a) If $P = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $Q = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ then find the value of $Q^T P^T$.

- b) If $A = \begin{bmatrix} 1 & 3 & 2 \\ 2 & 1 & 3 \\ 3 & 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 4 \\ 3 & 2 & 1 \\ 1 & 3 & 2 \end{bmatrix}$ then find the value of AB and BA .

4. If $A = \{1, 4\}$, $B = \{4, 5\}$, $C = \{5, 7\}$, then determine $(A \times B) \cap (A \times C)$

5. a) If sum of n terms of an Arithmetic progression is $5n^2 - 3n$, then find its p^{th} term.

- b) For what value of K ; $K + 2$, $4K - 6$, $3K - 2$ are three consecutive terms of an A.P.?

6. a) Find the sum of 7th terms of the Geometric progression 3, 6, 12,.....

- b) Find the inverse of the matrix $A = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$.

7. In a group of 1640 persons who can speak Nepali or English or both, 1220 can speak Nepali and 540 can speak English. Find :

- a) How many can speak both English and Nepali?

- b) How many can speak Nepali only?

- c) How many can speak English only?

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-1)
PROBLEM SOLVING TECHNIQUES

Subject Code : UGSEC2501

M.Code : 95411

Date of Examination : 10-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a) Define the term Character Set.
- b) What is variable? Explain in brief.
- c) What are Symbolic Constants?
- d) What is the difference between formatted and unformatted input/output in C?
- e) What is the use of the continue statement?
- f) Define a control statement.
- g) Differentiate between Single and Multidimensional Array.
- h) What is the advantage of using functions in C?
- i) Write the syntax for declaring a pointer variable.
- j) Define a structure in C.



SECTION - B

2. What are decision Trees and Pseudo code? How are they useful in problem-solving? Explain with examples.
3. Explain in detail the control statements in C. Write suitable examples for each type of loop (while, do-while and for) and explain how they differ from each other?
4. Explain the use and working of the switch statement in C. Write a program using switch to create a simple calculator that performs addition, subtraction, multiplication and division based on the user's choice.
5. Explain string handling functions in C with examples.
6. Explain the concept of Passing arguments to function using suitable example.
7. Write a detailed note on following :
 - a) Passing structures to functions.
 - b) Pointers and Arrays.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-1)
PROBLEM SOLVING USING C
Subject Code : UGCA-1903
M.Code : 76963
Date of Examination : 09-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) What is flowchart? Give an example of it.
- b) Define external variable.
- c) What is function prototype?
- d) How do you print a single character with printf() using its ASCII value?
- e) What is the difference between "while" and "do-while" loops?
- f) Define conditional operator with an example.
- g) What is the purpose of a loop's condition?
- h) Define an array and write syntax to declare 2-dimensional array of your choice.
- i) What is pointer variable?
- j) What is an identifier?



SECTION - B

2. Explain about the various logical operators available in C language with examples.
3. Write a program to print the following structure using **for** loop.

```
* * * *  
* * *  
* *  
*
```

4. Write a program in C language to add two matrixes of size [3X3].
5. Discuss the role of file handling in programming and explain the following functions in file operations:
 - a) getw()
 - b) putw()
 - c) fscanf()
 - d) fprintf()
6. Describe the process of passing arrays to functions in C programming. Provide examples to illustrate the concept.
7. Explain the storage classes available in C language.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

GENERAL ENGLISH-I

Subject Code : UGAEC2501

M.Code : 95415

Date of Examination : 08-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

- 1. Write briefly :**

- a. Write synonym of wish, chaos, angry, peculiar.
- b. Form a word using each of the following suffix: -ness, -ful, -ment, -ly.
- c. Use each of the following phrases in sentence: break the ice, a piece of cake.
- d. Punctuate the sentence : oh no what on earth happened here
- e. Correct the modifier : Covered in chocolate, Mary loved the ice cream.
- f. **Fill in the article :**
 - i) Could you pass me _____ salt, please?
 - ii) My brother is _____ engineer who works in the city.
- g. Transcribe the following words: Society, Laugh.
- h. Mark primary stress: Photographer, Politician.
- i. Write five introductory lines of an essay on Discipline in Life.
- j. What are the essential points of a concluding paragraph of an article/essay.



SECTION - B

2. Do as directed :

- Add suitable prefix to the following: necessary, mature, destructible, do, agree.
- Write the full form of the following: a.m., USA, DOB, GPS, AI.

3. Explain the techniques for writing precisely.

4. Correct the following sentences :

- a. The dogs runs in the park every morning.
- b. She go to the library on weekends.
- c. The books on the shelf is very old.
- d. My friend and her brother plays football together.
- e. The team are winning the match easily.
- f. Neither John nor Paul remembered their homework.
- g. Somebody left their umbrella in the hall.
- h. Each child must bring their own lunch.
- i. We arrived to the station late.
- j. They are interested for learning French.

5. Write an essay on "Human Avarice and Environmental Degardation"

6. Write a precise of the following paragraph :

Education plays a vital role in the development of a nation. It empowers individuals with knowledge, skills and values that help them lead productive and responsible lives. A well-educated population contributes to economic growth, social stability and technological advancement. Moreover, education promotes critical thinking, creativity, and innovation, which are essential for solving modern-day problems. Governments and societies must ensure access to quality education for all, regardless of gender, income or social background, so that every individual can reach their full potential.

7. Draft a conversation of at least ten dialogues between two friends discussing exam preparation.

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Roll No.

Total No. of Pages : 04

Total No. of Questions : 11

B.Com (Honours)/B.A. (JAMC)/ B.Sc. Honours (Microbiology / Nutrition and Dietetics)/B.Sc. (AI&ML)/B.Sc. (BT/FD/IT/G&WD)/MLS/OTT/ Radiotherapy Technology/B.Voc. (Child Caregiver)/

BTTM/BHMCT/BBA/BCA/IT (Sem-1)

HUMAN VALUES, DE-ADDICTION AND TRAFFIC RULES

Subject Code : HVPE101-18

M.Code : 93322

Date of Examination : 07-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Section-A is compulsory ONE mark each.
3. Section-B contains FIVE questions of FOUR marks each attempt all questions.
4. Section-C contains FIVE questions of SIX marks each attempt all questions.

SECTION-A

(10 × 1 = 10)

1. Answer the following :

- i) What is the content of self exploration?

आत्म-अन्वेषण की विषय-वस्तु क्या है?

सह-पड़चोले की विषय-वस्तु क्या है?

- ii) What is Artistic-Value?

कलात्मक-मूल्य क्या है?

कलात्मक-मूल्य की है?

- iii) What is Material Order?

सामग्री आदेश क्या है?

सामग्री आदेश की है?

- iv) What is innateness?

स्वाभाविकता क्या है?

स्वाभाविकता की है?



- v) Explain harmony in family?

परिवार में तालमेल के बारे में बताएं।

परिवार में तालमेल के बारे में बताएं।

- vi) What are the activities and needs of self and body?

आत्म और शरीर की गतिविधियां और आवश्यकताएं क्या हैं?

सह-पड़चोले की गतिविधियां और आवश्यकताएं क्या हैं?

- vii) What are the different patterns of differentiation?

भेदभाव के विभिन्न पैटर्न क्या हैं?

भेदभाव के विभिन्न पैटर्न क्या हैं?

- viii) What do you mean by Respect?

आप का सम्मान से क्या मतलब है?

आप का सम्मान से क्या मतलब है?

- ix) How the value "Guidance" is related with Self.

मूल्य "गार्डन" स्वयं के साथ कैसे संबंधित है?

मूल्य "गार्डन" स्वयं के साथ कैसे संबंधित है?

- x) What is Gratitude?

कृतज्ञता क्या है?

कृतज्ञता क्या है?

SECTION-B

(5 × 4 = 20)

2. How do you mean by values? How do they differ from skills? How values and skills are complementary.

मूल्यों से आप क्या समझते हैं? वे कौशल से किस प्रकार भिन्न हैं? मूल्यों और कौशल एक-दूसरे के पूरक कैसे हैं?

मूल्यों से आप क्या समझते हैं? वे कौशल से किस प्रकार भिन्न हैं? मूल्यों और कौशल एक-दूसरे के पूरक कैसे हैं?

3. What are pre conditionings? What is their source?

पूर्व-मान्यताएं क्या हैं? उनका स्रोत क्या है?

पूर्व-मान्यताएं क्या हैं? उनका स्रोत क्या है?

4. Differentiate between intention and competence. How do we come to confuse between the two?

इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?

ਇਰਾਦਾ ਅਤੇ ਸਮਰੱਥਾ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ? ਕਿਵੇਂ ਅਸੀਂ ਗਲਤੀ ਕਰਦੇ ਹਾਂ?

5. What do you mean by your natural acceptance? Illustrate with examples. Is it invariant with the time and place?

आपकी स्वाभाविक स्वीकृति से आपका क्या अभिप्राय है? उदाहरण सहित स्पष्ट कीजिए। क्या यह समय और स्थान के साथ अपरिवर्तनीय है?

ਤੁਹਾਡੀ ਕੁਦਰਤੀ ਸਵੀਕ੍ਰਿਤੀ ਤੋਂ ਤੁਹਾਡਾ ਕੀ ਮਤਲਬ ਹੈ? ਉਦਾਹਰਣਾਂ ਨਾਲ ਸਮਝਾਓ। ਕੀ ਇਹ ਸਮੇਂ ਅਤੇ ਸਥਾਨ ਨਾਲ ਬਦਲਦਾ ਹੈ?

6. "To be in a state of harmony is happiness". Examine the statement and illustrate it with two examples from your day-to-day life.

"सद्भाव की स्थिति में रहना खुशी है"। कथन की जाँच करें और इसे अपने दैनिक जीवन के दो उदाहरणों से स्पष्ट करें।

“ਇਕਸੁਰਤਾ ਦੀ ਸਥਿਤੀ ਵਿੱਚ ਰਹਿਣਾ ਖੁਸ਼ੀ ਹੈ”। ਕਥਨ ਦੀ ਜਾਂਚ ਕਰੋ ਅਤੇ ਇਸਨੂੰ ਆਪਣੇ ਰੋਜ਼ਾਨਾ ਜੀਵਨ ਵਿੱਚੋਂ ਦੋ ਉਦਾਹਰਣਾਂ ਦੇ ਨਾਲ ਸਮਝਾਓ।

SECTION-C

(6 × 5 = 30)

7. Right understanding + Relationship = Mutual fulfillment. Illustrate with two examples for each.

ਸਹੀ ਸਮਝ + ਰਿਸ਼ਤਾ = ਪਾਰਸਪਰਿਕ ਪੂਰਤਿ। ਪ੍ਰत्येक के लिए दो उदाहरणों के साथ उपरोक्त को स्पष्ट करें।

ਸਹੀ ਸਮਝ + ਰਿਸ਼ਤਾ = ਆਪਸੀ ਪੂਰਤੀ। ਹਰੇਕ ਲਈ ਦੋ ਉਦਾਹਰਣਾਂ ਦੇ ਨਾਲ ਉਪਰੋਕਤ ਨੂੰ ਦਰਸਾਓ।

8. How is a human-being co-existence of Self and Body? Explain Pre-Conditioning, Sensation and Natural-Acceptance.

इंसान स्वयं और शरीर का सह-अस्तित्व कैसे है? पूर्व-मान्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ।

ਮਨੁੱਖ ਸਵੈ ਅਤੇ ਸਰੀਰ ਦਾ ਸਹਿ-ਅਸਤਿਤਵ ਕਿਵੇਂ ਹੈ? ਪੂਰਵ-ਮਾਨਤਾ, ਸੰਵੇਦਨਾ ਅਤੇ ਸਹਿਜ-ਸਵਿਕਰਿਤੀ ਸਮਝਾਓ।

9. Compare the Four Orders in Nature on the basis of their salient aspects.

मुख्य पहलुओं के आधार पर प्रकृति में चार आदेशों की तुलना करें।

ਮੁੱਖ ਪਹਿਲੂਆਂ ਦੇ ਆਧਾਰ ਉੱਤੇ ਕੁਦਰਤ ਵਿੱਚ ਚਾਰ ਆਦੇਸ਼ਾਂ ਦੀ ਤੁਲਨਾ ਕਰੋ।

[M-93322]

(S-17) 2142

10. Critically examine the state of society today in context with fulfillment of the comprehensive human goal.

व्यापक मानवीय लक्ष्य की पूर्ति के सन्दर्भ में आज समाज की स्थिति का आलोचनात्मक परीक्षण करें।

ਵਿਆਪਕ ਮਨੁੱਖੀ ਟੀਚੇ ਦੀ ਪੂਰਤੀ ਦੇ ਸੰਦਰਭ ਵਿੱਚ ਅੱਜ ਸਮਾਜ ਦੀ ਸਥਿਤੀ ਦੀ ਗੰਭੀਰਤਾ ਨਾਲ ਜਾਂਚ ਕਰੋ।

11. The problem today is that the desires, thoughts and expectations are largely set by pre conditionings or sensations. Examine this statement.

आज समस्या यह है कि इच्छाएँ, विचार और अपेक्षाएँ काफी हद तक पूर्व-स्थितियों या संवेदनाओं द्वारा निर्धारित होती हैं। इस कथन का परीक्षण करें।

ਅੱਜ ਸਮੱਸਿਆ ਇਹ ਹੈ ਕਿ ਇੱਛਾਵਾਂ, ਵਿਚਾਰਾਂ ਅਤੇ ਉਮੀਦਾਂ ਜ਼ਿਆਦਾਤਰ ਪੂਰਵ-ਸ਼ਰਤਾਂ ਜਾਂ ਸੰਵੇਦਨਾਵਾਂ ਦੁਆਰਾ ਨਿਰਧਾਰਤ ਕੀਤੀਆਂ ਜਾਂਦੀਆਂ ਹਨ। ਇਸ ਕਥਨ ਦੀ ਜਾਂਚ ਕਰੋ।

Note : Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.

[M-93322]

(S-17) 2142

[illegible]

Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-1)
ENVIRONMENTAL SCIENCE AND SUSTAINABILITY

Subject Code : UGVAC2501

M.Code : 95417

Date of Examination : 06-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :**
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- What is Desertification?
- What are the different methods of conserving water resources?
- What is meant by biodiversity?
- What are coral reefs?
- What are the various causes of Man-Wildlife conflicts?
- How are pollutants classified based on nature?
- List various sources of noise pollution.
- Mention the causes of acid rain.
- What is ozone hole? What are the causes of ozone hole formation?
- What are the various objectives of sustainable development?



SECTION - B

2. a) Name and discuss major world food problems.
b) Explain causes of soil erosion and enumerate the methods of prevention of soil erosion.
3. Enumerate various functional features of an ecosystem.
4. Explain 'In-Situ' and 'Ex-Situ' approaches of conservation of biodiversity. Compare their advantages and limitations.
5. Define Marine pollution and thermal pollution and discuss the various sources contributing it. How can we prevent pollution of our oceans?
6. Why do earthquakes occur? Suggest the management plan for mitigate the effects of earthquake. Explain the case of any earthquake that occurred in India.
7. Discuss salient features of the Water (Prevention and control of pollution) Act, 1974. Also, describe various functions of Central board and State board.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-1)
COMPUTER ARCHITECTURE

Subject Code : UGCC-2502

M.Code : 95413

Date of Examination : 02-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

- I. Write briefly :**
- Define a logic gate.
 - What is the difference between AND gate and OR gate?
 - What is Boolean algebra?
 - Define K-map.
 - What is a multiplexer?
 - Define flip-flop.
 - What is the difference between a combinational and a sequential circuit?
 - What is RISC?
 - Define memory reference instruction.
 - What is the purpose of the data bus?



SECTION - B

2. Explain with neat diagrams how NAND and NOR gates act as universal gates? Implement basic logic operations using only NAND gates.
3. Write a detailed note on Simplification of Boolean Expression using K-Maps.
4. **Write a detailed note on following :**
 - a) Half Adder
 - b) Full Subtractor
5. Explain in-detail about Encoders and Decoders.
6. Explain the construction and working of T flip-flop. Also, discuss applications of flip-flops in digital systems.
7. Explain in detail about Von Neumann and Harvard architectures with neat diagrams.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (IT/Graphics & Web Designing) (BCA) (Sem.-1)

MATHEMATICS

Subject Code : UGCA1901

M.Code : 76961

Date of Examination : 12-01-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- a) Define Null set and give one example.
- b) Write the difference between Subset and Proper Subset.
- c) Construct the truth table of $(p \vee q) \wedge (\neg p)$.
- d) Define tautology with a suitable example.
- e) Write the order of the following matrix $A = \begin{bmatrix} 2 & 3 \\ 0 & 0 \end{bmatrix}$.
- f) Find the transpose of the matrix $A = \begin{bmatrix} 1 & -4 \\ -2 & 0 \end{bmatrix}$.
- g) Write the general term of an Arithmetic Progression (AP).
- h) Find the 8th term of the AP : 7, 11, 15...
- i) If $A = \{1, 2, 3, 4\}$, $B = \{3, 4, 5\}$, find $A \cup B$.
- j) Define ratio for a Geometric Progression.



SECTION - B

2. a) Define Power Set. Also, give a suitable example.
b) In a survey of 50 students, 25 like Mathematics, 30 like Physics, and 10 like both. Find the number of students who like neither subject.
3. Define six different types of matrices with examples.
4. a) If the 5th term of an AP is 15 and the 10th term is 35, find the first term and common difference.
b) Find the sum of first 25 terms of the AP: 3, 7, 11...
5. If $A = \begin{bmatrix} 2 & 1 \\ 0 & -3 \end{bmatrix}$ & $B = A = \begin{bmatrix} 0 & 4 \\ -5 & -2 \end{bmatrix}$ then compute AB and BA.
6. a) Show using truth table: $(p \wedge q) \rightarrow p$ is always true.
b) Define Logical Equivalence. Prove that $p \vee (q \wedge r) = (p \vee q) \wedge (p \vee r)$.
7. a) Find the sum of first 12 terms of the GP : 5, 10, 20...
b) Differentiate between conjunction and disjunction.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)
ENVIRONMENTAL STUDIES
Subject Code : EVS-102-18
M.Code : 77421
Date of Examination: 06-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a) Define Environmental Studies and explain its multidisciplinary nature.
- b) What is the importance of public awareness in environmental protection?
- c) Name any two decomposers and their roles in an ecosystem.
- d) Differentiate between renewable and non-renewable resources.
- e) State two major causes of deforestation in India.
- f) What are biodiversity hotspots? Give two examples from India.
- g) List any two effects of noise pollution.
- h) What is the Greenhouse effect?
- i) Mention two preventive measures for soil erosion.
- j) What is meant by rainwater harvesting?

SECTION - B

2. Discuss the scope and importance of Environmental Studies in modern society.
3. Explain the structure and functions of forest and aquatic ecosystems with neat diagrams.
4. Describe the various types of natural resources and explain the threats to forest and water resources in India.
5. What are the different levels of biodiversity? Discuss the causes and conservation strategies.
6. Explain causes, effects and control measures of air, water, soil and noise pollution.
7. **Write short notes on the following :**
 - a) Global Warming and Ozone Depletion.
 - b) Environmental Disasters and their mitigation measures.



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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-2)
FUNDAMENTALS OF STATISTICS
Subject Code: _____

Subject Code : UGCA-1907

M.Code : 77415

Date of Examination: 09-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- Explain the uses and importance of statistics in real-world applications.
- Define rounding off data. Why is it important in data analysis?
- Arrange the following data in a frequency distribution table:
Data | 8, 10, 12, 10, 8, 15, 12, 10, 8, 12 |
- Differentiate between diagrammatic and graphic presentation of data.
- Calculate the median for the data set: 40, 25, 35, 20, 30.
- What are the characteristics of a Good Average?
- Describe the merit and demerit of using median as a measure of central tendency.
- Find the standard deviation of the following data set: 5, 15, 25, 20, 10.
- Discuss the objectives of Dispersion.
- Describe the coefficient of variation.



SECTION-B

2. Define statistics and discuss its origin, features and scope. How does it contribute to decision-making processes?
3. Explain the methods of collecting primary and secondary data. Discuss the advantages and disadvantages of each method.
4. Describe the components and types of statistical tables. What are the general rules for constructing a good table?
5. **Explain the process of creating a frequency distribution table and construct one for the following data:**
12, 15, 10, 15, 20, 12, 15, 18, 12, 10, 20, 15.
6. A factory produces items that have weights recorded as follows (in grams): 150, 155, 160, 150, 165, 160, 155, 160. Calculate the arithmetic mean, median, and mode for this data and discuss their relevance.
7. **The following data set represents the marks obtained by students in a test:**
45, 55, 60, 65, 70, 75, 80, 85, 90, 95.
Calculate the range, mean deviation and co-efficient of variation for this data.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA(Sem.-2)
COMPUTER SYSTEM ARCHITECTURE
Subject Code : UGCA-1908
M.Code : 77416
Date of Examination : 11-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a) What are the applications of Logic Gates?
- b) Define NAND and NOR gates and justify why they are called Universal Gates.
- c) Write difference between Combinational & Sequential circuits?
- d) What is the main difference between a Half Adder and a Full Adder?
- e) What is an Encoder? Give an example.
- f) Give truth table of D Flip flop.
- g) What is a Race-Around Condition in JK Flip-Flop?
- h) What are the key differences between Computer Organization and Computer Architecture?
- i) What is the Stored Program Concept and why is it important?
- j) What is the purpose of an Address Bus in a computer system?



SECTION - B

2. Write a detailed note on simplification of Boolean Expression using Boolean algebra.
3. What is a Binary Adder/Subtractor? Explain its working with a logic diagram.
4. Write a detailed note on Multiplexers and Demultiplexers.
5. Write a detailed note on applications of Flip-Flops.
6. Explain the Stored Program Concept with Von Neumann and Harvard architectures.
7. What is an Instruction Format? Explain different types of instructions with examples.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student

Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-2)
OBJECT ORIENTED PROGRAMMING USING C++
 Subject Code : UGCA-1909
 M.Code : 77417

Date of Examination : 13-12-2025

Time : 3 Hrs.

Max. Marks : 60

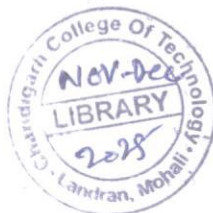
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION - A

1. Explain :

- How are data and functions organized in a procedure-oriented program? Compare it with OOP.
- What is function prototype? How are they defined?
- What are the advantages of reference variables in parameter passing?
- What is the purpose of the scope resolution operator?
- What is the lifetime and scope of a variable?
- Distinguish between a class and an object.
- What are the characteristics of a constructor?
- What are the implications of public, protected and private visibility modes?
- Can operator precedence be changed through operator overloading?
- What are rules for overloading operators?



SECTION - B

2. Discuss the principles of object-oriented programming.
3. Write a program in C++ that illustrates the concepts of function overloading and function-overriding.
4. Write a program in C++ to create a database of the following items of the derived class. Name of the patient, Sex, Age, Ward number, Bed number, Nature of illness, Date of admission.

Design a base class consisting of data members viz. name of patient, sex and age and another base class consisting of ward number, bed number and the nature of illness. The derived class consists of data member, date of admission, Program should carry the following methods :
 - a) Add new entry
 - b) List the complete record.
5. Distinguish between single and multiple inheritances.
6. Write a program to swap the two arrays of members by pointers, by reference and by value. Compare the three ways.
7. What are pure virtual functions? Explain with example(s).

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-3)
COMPUTER NETWORKS

Subject Code : UGCA-1913

M.Code : 78179

Date of Examination : 03-12-2025

Time : 3 Hrs.

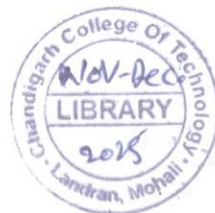
Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. SECTION A : 100 marks

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :
 - a) Define simplex and duplex communication with examples.
 - b) List any two advantages of optical fiber transmission.
 - c) What is packet switching?
 - d) Name the seven layers of the OSI reference model.
 - e) What is attenuation?
 - f) Define framing in data link layer.
 - g) What is CSMA/CD?
 - h) Explain the concept of congestion control in networking.
 - i) What is Cryptography in the Presentation Layer?
 - j) Explain in brief about TCP.



SECTION-B

2. Explain in detail the differences between digital and analog transmission. How are synchronous and asynchronous transmissions used in data communication?
3. What are different network topologies? Explain Bus, Star, Ring, Mesh, Tree, and Hybrid topologies with diagrams, advantages, and disadvantages.
4. Explain different error detection and correction techniques used in the data link layer.
5. Describe the Optimality Principle for routing. Explain the Shortest Path Routing algorithm in detail.
6. What are congestion control policies in computer networks? Explain Leaky Bucket algorithm in detail.
7. Discuss the working of HTTP, FTP and DNS as application layer protocols.

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Total No. of Pages :02

Total No. of Questions : 07

B.Sc.(IT)/BCA (Sem.-3)
PROGRAMMING IN PYTHON
Subject Code :UGCA-1914
M.Code : 78180
Date of Examination : 05-12-2025

Time : 3 Hrs.

Max. Marks : 60

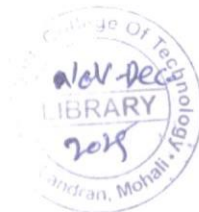
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Algorithm
- b) Tuple
- c) Lists
- d) Dictionary
- e) Multiline statement
- f) Boolean Value
- g) Expression
- h) Python Interpreter
- i) Selection
- j) Sequence



SECTION-B

2. Explain values and items method used in dictionary with example.
3. What are the basic list operations that can be performed in Python? Explain each operation with its syntax and example.
4. Demonstrate the use of Exception Handling in Python.
5. *“Are Python strings immutable”?* Justify your answer.
6. Write Python Program to Calculate Area and Perimeter of different Shapes using Polymorphism.
7. What is a function? What are their types? How to pass arguments in function?

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Total No. of Questions : 07

Total No. of Pages :02

B.Sc. (G&WD/IT)/ BCA(Sem.-3)
DATA STRUCTURE

DATA STRUCTURES
Subject Code : UGCA1915
M. Code : 701

M.Code : 78181

M.Code : 78181
Date of Examination : 08-12-2025

Time : 3 Hrs.

Max. Marks : 60

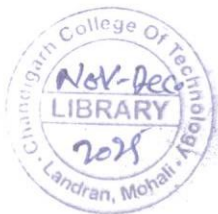
INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is compulsory.

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- Define an algorithm. Give one example.
- What is the difference between static and dynamic memory allocation?
- Define recursion with a simple example.
- Differentiate between a one-dimensional and a two-dimensional array.
- What is a circular queue?
- Define stack. List any two applications.
- What is a doubly linked list?
- Differentiate between binary tree and binary search tree.
- What is a hash function?
- Write one difference between DFS and BFS in graph traversal.



SECTION - B

- ### SECTION - B
2. Write and explain an algorithm to find the largest element in an array and implement it using a program.
 3. Implement a stack using an array and demonstrate push and pop operations.
 4. Write a program to implement a circular queue using an array and perform insertion and deletion operations.
 5. Write a program to insert a node at the beginning and end of a singly linked list and display the list.
 6. Explain quick sort with algorithm and trace the sorting of the array [35, 15, 25, 10, 50].
 7. Explain collision resolution techniques in hashing with examples.

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Total No. of Pages :02

Total No. of Questions : 07

BCA (Sem.-3)

PC ASSEMBLY & TROUBLESHOOTING

Subject Code :UGCA-1919

M.Code : 78185

Date of Examination :10-12-2025

Time : 3 Hrs.

Max. Marks : 60

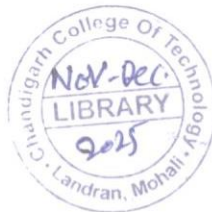
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Software
- b) OS
- c) Booting
- d) Microcomputer
- e) Scanners
- f) LAN
- g) Motherboard
- h) Configure
- i) Cache memory
- j) Peripheral



SECTION-B

2. Discuss any 3 input and output devices.
3. Write a note on different processors used for personal computers.
4. How to solve and troubleshoot problems with memory.
5. Explain the working of printers.
6. Write a note on the role and types of drivers.
7. How to troubleshoot booting process before the OS is loaded.

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Roll No.

Total No. of Pages :02

Total No. of Questions : 07

BCA (Sem-4)
SOFTWARE ENGINEERING
Subject Code :UGCA1921
M.Code :79725
Date of Examination :06-12-2025

Time : 3 Hrs.

Max. Marks : 60

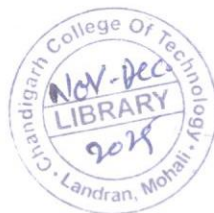
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

I. Write briefly :

- a) What is the need of Software engineering?
- b) Name various specialized Process Models.
- c) What are functional requirements?
- d) What is the output of the system analysis phase? What does it contain?
- e) What is Cohesion?
- f) What is software re-engineering?
- g) List the principles of a good design.
- h) What do you mean by metrics?
- i) Why is testing important?
- j) What is unit testing?



SECTION - B

2. What are the properties of good SRS document? Explain.
3. Distinguish between Perspective and specialized Process Models.
4. What are the characteristics of good design? Explain.
5. Explain the concept of coupling and cohesion in detail? Also explain their types.
6. What do you mean by re-engineering? What are its measures, metrics and indicator? Explain.
7. Compare various testing techniques in terms of their advantages and disadvantages

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

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Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem-4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination: 09-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:
 - a. Why is data redundancy a problem in traditional file systems?
 - b. Why is data independence important in DBMS?
 - c. Why do we need foreign keys in a relational database?
 - d. Define check constraint.
 - e. What will happen if you execute `DELETE FROM table_name;` without a `WHERE` clause?
 - f. What is locking in concurrency control?
 - g. Difference between undo and redo operation.
 - h. Define self-join.
 - i. Structure of distributed database.
 - j. Define trigger.



SECTION - B

2. Compare DBMS with file-based systems and explain why DBMS is preferred.
3. Explain Entity-Relationship (E-R) Model with suitable examples by taking entity, attributes, relationships and cardinality.
4. Define functional dependency (FD). Explain 1NF, 2NF, 3NF, BCNF normal forms with examples.
5. Define Atomicity, Consistency, Isolation, and Durability. Provide a banking transaction example explaining how ACID ensures data integrity?
6. What is concurrency control? Explain Locking Mechanisms, Timestamp Ordering, and Optimistic Concurrency Control.
7. **Write short note on :**
 - a. Stored procedures
 - b. Alter vs. update in sql using an example.

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Total No. of Questions : 07

BCA (Sem-4)
OPERATING SYSTEMS
Subject Code : UGCA-1923
M.Code : 79727
Date of Examination : 11-12-2025

Time : 3 Hrs.

Max. Marks : 60

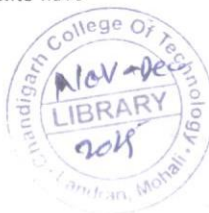
INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- Differentiate between User and Kernel level threads.
- Define the term PCB in brief.
- Differentiate between Pre-emptive and Non-Pre-emptive scheduling.
- Define the term Relocation and linking in reference to memory Management.
- Explain the term External fragmentation in brief.
- Why page size is always power of 2.
- What is the function of an I/O controller?
- Explain the term Seek time in reference to disk storage.
- Name two major issues in distributed operating systems.
- What is the main challenge in scheduling processes in a multiprocessor Operating System?



SECTION-B

2. Write a detailed note on Functions of an Operating System.
3. **Explain the following scheduling algorithms with suitable example :**
 - a) SJF
 - b) Round-Robin
4. Explain in detail about the Paging scheme of Memory Management.
5. **Write a detailed note on following in reference to File Management :**
 - a) Remote File Systems
 - b) File Protection
6. Write a detailed note on Disk Storage.
7. Write a detailed note on Real Time operating System, characteristics and structure.

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[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Information Technology) / (BCA) (Sem-4)

WEB DESIGNING

Subject Code : UGCA1927

M. Code : 79731

Date of Examination : 13-12-2025

Time : 3 Hrs.

Max. Marks : 60

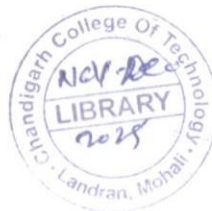
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Answer briefly:

- What is an IP address?
- What is the function of the `<title>` tag in HTML?
- What is the difference between a web server and a web browser?
- What are the different types of lists in HTML?
- What is the purpose of the `<frameset>` and `<frame>` tags?
- How does the `<submit>` button work in an HTML form?
- How do you create a password input field in an HTML form?
- What are variables in JavaScript?
- What is the difference between `==` and `===` in JavaScript?
- What are JavaScript events?



SECTION - B

- Describe the structure of an HTML document and its major components.
- Explain the different text formatting tags available in HTML with examples.
- Explain how tables are created in HTML? Describe different attributes used with tables.
- Explain the concept of functions in JavaScript and how function parameters work.
- Explain the various form input methods in HTML, with examples of how they work?
- Create a HTML Form that takes two numbers as input and writes code in JavaScript to display their sum, difference, product and quotient.

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Total No. of Questions : 07

Date of Examination : 02-12-2025

Max. Marks : 60

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

- a) Grid Computing
- b) Utility Computing
- c) Benefits of Cloud Computing.
- d) Virtualization
- e) Elasticity
- f) Network Capacity
- g) Instances Types
- h) Cloud Security
- i) Resource ceiling
- j) VMware

2. Write a note on recent trends in Cloud Computing
3. Explain in detail the various Cloud Deployment Models.
4. Explain in detail Taxonomy of Virtualization techniques.
5. Write a note on importance of service level agreement and its types.
6. Write down the steps involved in ensuring security over cloud.
7. **Explain in detail :**
 - a) Google AppEngine Architecture.
 - b) SQL Azure

1 | Page

Roll No.

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Total No. of Pages :02

Total No. of Questions : 07

BCA (Sem.-5)
PROGRAMMING IN JAVA
Subject Code :UGCA-1932
M.Code :90315

Date of Examination:29-11-2025

Time : 3 Hrs.

Max. Marks : 60

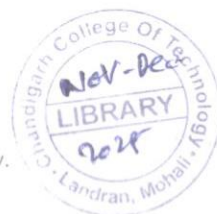
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly:

- a) List four features of Java that support-platform independence and security.
- b) What is the JRE and how does it differ from the JDK?
- c) Write the general form of an if—else if ladder and state one use-case.
- d) When would you prefer switch over multiple if-else statements? Mention two constraints.
- e) What do break and continue do in nested loops?
- f) Define constructor and state two properties of constructors in Java.
- g) What is the difference between String and StringBuffer?
- h) Explain primitive data types.
- i) Name any four stream classes (byte/character) and one usage of each.
- j) Write the basic life-cycle methods of an Applet.



SECTION-B

2. Explain looping constructs, including loop control (break, continue, labeled break). Provide short examples that illustrate each.
3. Describe classes and objects in Java: access modifiers, passing arguments, constructors (default/parameterized/overloaded), this, static members, and garbage collection.
4. Explain inheritance and polymorphism: single inheritance, overriding, super and constructor chaining, abstract classes vs interfaces, access specifiers, and packages (creation, access, and import/static import). Include small examples.
5. Explain multithreading in Java: thread creation (Thread vs Runnable), schedulers, priorities, joining and synchronization (intrinsic locks synchronized methods/blocks).
6. Write notes on Java I/O: stream hierarchy (byte vs character, buffered/filtered), File/Path, random access file; safe I/O with try-with-resources. Briefly add Applet graphics and event handling overview.
7. Design classes Account and SavingsAccount with methods deposit, withdraw, and interest calculation. Demonstrate overriding and use of super.

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Total No. of Pages :02

Total No. of Questions : 07

BCA (Sem.-5)
INTERNET OF THINGS
Subject Code : UGCA1933
M.Code : 90316

Date of Examination : 27-11-2025

Time : 3 Hrs.

Max. Marks : 60

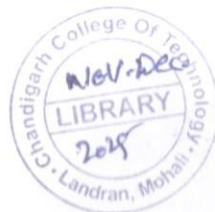
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- What is basic difference between M2M and IoT?
- What is the role of an IoT system in today's era?
- Define Raspberry.
- What is significance of Exclusive pair in IOT communication model?
- How IoT solutions are helpful in health care system?
- Explain network function virtualization in brief.
- Define term API.
- Define term embedded system.
- What do you mean by term M2M?
- IoT solutions are self-configuring, what is the meaning of term self-configuring here.



SECTION-B

2. What do you mean by IoT enabled technologies? Explain IoT enabled technologies in detail.
3. Explain domain specific- Retail and Logistics.
4. Explain IoT design methodology in detail with suitable examples.
5. Define need for IoT system management and explain simple network management protocols in detail.
6. Propose an IoT solution for smart agriculture for a crop management (highlight the existing system where human interaction is involved and how an IoT system can overcome it) also explain how the proposed IoT solution will help the farmers to increase productivity of the crops.
7. What do you mean by security management? Explain how security management is important and necessary in an IoT system?

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Roll No. _____
Total No. of Questions : 07

Total No. of Pages :02

Bachelor of Computer Applications (Sem.-5)

COMPUTER GRAPHICS

Subject Code :UGCA1934

M.Code :90317

Date of Examination : 26-11-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- Name three input devices commonly used in computer graphics.
- Explain the significance of the Sutherland-Hodgman algorithm in clipping.
- Which algorithm is used for scan converting circles?
- How does virtual reality differ from traditional graphical environments?
- Can you explain the concept of 3D viewing devices briefly?
- What is the primary difference between the Bresenham algorithm and midpoint ellipse algorithm?
- Differentiate between two main types of projections used in 3D graphics.
- Explain the concept of color shading in 3D graphics.
- Why is a homogeneous coordinate system needed in computer graphics?
- What is the purpose of viewing transformations in computer graphics?



SECTION - B

2. Describe the various applications of computer graphics across different industries and Explain how they impact daily life?
3. Discuss the challenges involved in area filling techniques such as flood fill and boundary fill and explain how these algorithms address those challenges?
4. Explain the step-by-step process of scan converting a line using the Bresenham algorithm, discussing its advantages over other methods.
5. Describe the process and mathematical principles behind geometric transformations such as translation, rotation, scaling and shearing, including how matrices are utilized for these transformations?
6. Provide a detailed explanation of viewing transformations in computer graphics including the concepts of world, view and projection coordinates and how they are used to map objects onto the screen?
7. Discuss the concept of morphing in computer graphics, including its applications in animation and special effects, the techniques used to achieve morphing effects and the challenges involved in implementing them effectively.

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Total No. of Questions : 07

LINUX OPERATING SYSTEM

M.Code : 90318

Date of Examination : 24-11-2025

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

- How is Linux related to Unix?
- What is the terminal in Linux?
- How do you remove a file in Linux command line interface?
- What is a comment in shell scripting?
- How do you load a kernel module?
- What is a repository in Linux?
- How do you execute a shell script?
- How do you add a new user in Linux?
- How do you display the current directory in Linux command line interface?
- What is a variable in shell scripting?

2. What are the historical-origins of Linux and how has it evolved over time to become one of the most widely used operating systems?
3. Discuss the purpose and features of the find and locate commands in Linux. How do these commands facilitate file system navigation, searching and management tasks?
4. Describe the concept of functions and their role in modularizing code in shell scripting.
5. Describe the role of package managers in Linux distributions.
6. Discuss the role of process management utilities in monitoring and controlling processes in Linux.
7. Describe the architecture of the Linux operating system and its components.

2 | Page

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Total No. of Pages : 02

Total No. of Questions : 07

BCA(Sem.-5)
PROGRAMMING IN PHP
Subject Code : UGCA1929
M.Code : 90312

Date of Examination : 19-11-2025

Time : 3 Hrs.

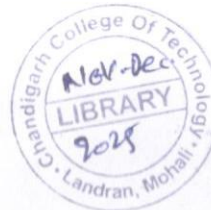
Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :
- What is PHP and why is it called a server-side scripting language?
 - What is variable scope in PHP?
 - What is the difference between while() and do while() loop?
 - Define a function in PHP.
 - What is the purpose of default arguments in a PHP function?
 - What are super global variables in PHP?
 - Write the purpose of combining HTML and PHP code.
 - What is the difference between a file and a directory? Which PHP function is used to copy a file?
 - What is the difference between DELETE and DROP in SQL?
 - Write the SQL command to insert data into a table.



SECTION-B

2. Discuss PHP data types in detail with examples. Also, explain variable scope and variable manipulation.
3. What are arrays in PHP? Explain indexed and associative arrays with examples. Write a program using foreach() loop to display array values.
4. Explain the working of forms in PHP. Discuss the use of super global variables (\$_GET, \$_POST, \$_REQUEST) with examples.
5. Explain different file handling functions in PHP with suitable examples: opening, reading, writing, closing, copying, renaming and deleting a file.
6. What are DML operations? Explain INSERT, UPDATE, DELETE and SELECT commands with syntax and examples.
7. Explain control statements in PHP with suitable examples: if, elseif, switch, while, do-while and for loop.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.-06)

DIGITAL MARKETING

Subject Code : UGCA-1947

M.Code : 91691

Date of Examination : 21-11-2025

Time : 3 Hrs.

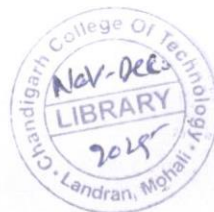
Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:
 - a. Facebook Marketing
 - b. Digital Marketing.
 - c. Sponsorships marketing
 - d. Social media optimization
 - e. Define keywords analytics tool.
 - f. Search Engine result page
 - g. On-site marketing
 - h. Web analytics
 - i. Video marketing
 - j. Content marketing



SECTION - B

2. What is the importance of internet and search engine? Discuss the role of keywords for SEO.
3. How on-page SEO is different from Off-page SEO? What are the strategies of Off-page SEO?
4. What is the role of website for online marketing? Discuss the process of website development.
5. Describe in details the viral marketing, influencer marketing, affiliate marketing and referral marketing.
6. What is social media marketing? Discuss the different types of SMM and their features.
7. What is online advertising and its advantages? Discuss the mobile marketing and its role for marketers.

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Roll No. _____
Total No _____

Total No. of Pages 02

Total No. of Questions : 07

BCA (Sem.-6)
ANDROID PROGRAMMING
Subject Code :UGCA-1943
M.Code :91681
Date of Examination :26-11-202

Time : 3 Hrs.

Max. Marks : 60

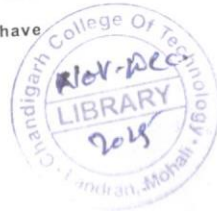
INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :**
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Explain briefly :

- a) Framework
- b) Android Stack
- c) Menus
- d) Radio Button
- e) Scalability
- f) Android OS
- g) Intent
- h) GPS
- i) Localization
- j) XML



SECTION - B

2. Describe in detail the architecture and working of Android.
3. Explain advantages and features of Android.
4. Describe in detail the service life cycle.
5. Discuss various testing methodologies for mobile applications.
6. Write a note on directory structure of an Android Project.
7. Define toast. Explain it with help of example.

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Roll No. _____
Total No. of Questions : 07

Max. Marks : 60

BCA(Sem.-6)
MACHINE LEARNING
Subject Code :UGCA1950
M.Code :91697

Date of Examination: 01-12-2025

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :
- a) Supervised learning
 - b) Clustering
 - c) SVM
 - d) Naïve Bayes
 - e) Grid search
 - f) Linear regression
 - g) MDP
 - h) Q-learning
 - i) K-mediods
 - j) Confusion Matrix



SECTION - B

2. Differentiate between exploration and exploitation dilemma.
3. Explain with example Epsilon Greedy Algorithm.
4. Define reinforcement learning. Discuss elements of it.
5. Compare between Q-values and V-values.
6. Explain the working of hierarchical clustering.
7. Compare between supervised learning and unsupervised learning.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-6)
INFORMATION SECURITY
Subject Code : UGCA-1948
M.Code : 91695
Date of Examination: 15-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly:

- a) How does cryptography help in securing communication?
- b) What is the difference between targeted and non-targeted malicious code?
- c) Can virus infect hardware?
- d) How do firewalls prevent unauthorized access to a network?
- e) What types of sensitive data are typically stored in a database?
- f) What is public-key encryption?
- g) How does ethical hacking help in improving system security?
- h) How does physical security contribute to protecting sensitive data and systems?
- i) What are the rights of employer?
- j) Define inferential control in the context of database security.



SECTION-B

2. a) Explain the different methods of defense used in computer security to protect systems and data.
b) Describe how substitution ciphers work. Provide an example of their use in cryptography?
3. a) How do symmetric and asymmetric encryption differ in terms of key management and security?
b) What is targeted malicious code and how is it different from general malware? Discuss examples of targeted attacks.
4. a) What are the common memory and address protection mechanisms used by operating systems to prevent unauthorized access?
b) What is the role of a trusted operating system in ensuring the security of a computer system? Provide examples of trusted operating systems.
5. a) Discuss the challenges in designing a multilevel database. How do these databases ensure data confidentiality and security?
b) Explain the different types of network security controls used to prevent unauthorized access and ensure data integrity.
6. a) Explain the process of risk analysis in security management. How does it help organizations assess vulnerabilities and mitigate potential threats?
b) Discuss the importance of physical security in protecting sensitive data and computer systems. What measures can be taken to improve physical security?
7. What lessons can be learned from the 2017 WannaCry ransomware attack regarding corporate security practices?

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Roll No.

Total No. of Pages :02

Total No. of Questions : 07

Bachelor of Computer Applications (Sem.-6)

CYBER LAWS & IPR

Subject Code :UGCA1949

M.Code :91696

Date of Examination :04-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) What do mean by jurisdiction in IT act 2000?
- b) What do you mean by Digital Forgery?
- c) What is Cyber Harassment in cyber world?
- d) Define the term Cyber Defamation.
- e) What do you understand from Child pornography?
- f) What is the importance of Copyright?
- g) What is a Trademark?
- h) Explain the importance of Granting of Patent.
- i) List the different types of frauds in cyber world.
- j) Explain how the trademark is protected?



SECTION-B

2. Explain the need and challenges for implementation of Cyber Law in India.
3. What are the different types of Trademarks and explain how the trademark is protected and registered in cyber world?
4. Describe the patent and kind of inventions protected by patents and also elaborate the procedure meant for filling of patents in India.
5. Explain the challenges for Enforcement of Cyber law in Cyber World.
6. Explain the Right to privacy and Data protection on Internet.
7. Explain the importance of minimum contact theory and use of web technology in cyber law and Jurisdiction in cyber world.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.