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Total No. of Pages: 2

Total No. of Questions: 09

B.Tech. (CSE, IT), Semester- 3rd
(AIDS, AIML)
MATHEMATICS - III

Subject Code: BTAM 304-18

M. Code: 76438/76393

Date of Examination: 29/5/2025

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.

Q. No.	Questions	Course Outcomes	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Explain Euler's formula for homogeneous functions.	CO1	L2
b.	Find $\frac{dz}{dt}$ when $z = xy^2 + x^2y$, $x = at^2$, $y = 2at$.	CO1	L1
c.	Find the area bounded by the parabola $y = x^2$ and the line $y = x + 2$.	CO2	L1
d.	Translate $\int_0^2 \int_1^2 \int_0^{yz} xyz \, dx \, dy \, dz$.	CO2	L2
e.	State Leibnitz test for alternating series.	CO3	L1
f.	Using Cauchy's root test, demonstrate the convergence of $\sum \left(1 + \frac{1}{n}\right)^{-n^2}$.	CO3	L2
g.	For what value of k , the equation $xy^3 dx + k(x^2 y^2) dy = 0$ is an exact equation?	CO4	L1
h.	Solve $y = px + \cot^{-1} p$	CO4	L2
i.	Find the particular integral of $y''' - y'' + 4y' - 4y = \sin 3x$	CO5	L1



j.	Solve $\frac{d^2y}{dx^2} - 7\frac{dy}{dx} + 12y = 0$.	CO5	L2
SECTION-B			
2.	If $u = \log(x^3 + y^3 + z^3 - 3xyz)$, verify that $\left(\frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}\right)^2 u = -\frac{9}{(x+y+z)^2}$	CO1	L3
3.	Change the order of integration and hence evaluate $I = \int_0^1 \int_{x^2}^{2-x} xy \, dy \, dx$	CO2	L5
4.	Examine for what values of 'x' does the series $\frac{1}{2}x + x^2 + \frac{9}{8}x^3 + x^4 + \frac{25}{32}x^5 + \dots \infty$, converge or diverge.	CO3	L4
5.	Solve $xy(1+xy^2)\frac{dy}{dx} = 1$.	CO4	L3
6.	Solve $y'' - 2y' + 2y = e^x \tan x$ by variation of parameter method.	CO5	L3
SECTION-C			
7.	Evaluate the volume of ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$.	CO2	L5
8.	a). Solve $(2y^2 + 4x^2y)dx + (4xy + 3x^3)dy = 0$. b). Solve $y = 2px + y^2p^3$	CO4	L3
9.	Evaluate the differential equation $(1+x)^2 \frac{d^2y}{dx^2} + (1+x) \frac{dy}{dx} + y = 2\sin \log(1+x)$	CO5	L5

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Roll No.

Total No. of Pages: 02

Total No. of Questions: 09

B.Tech (Information Technology), Semester-3rd

Object Oriented Programming

Subject Code: BTIT-302-18

M.Code: 76392

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 **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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define C++ and state two features that differentiate it from C.	CO-1	L1
b.	Compare the working of while and for loops.	CO-1	L2
c.	What is the meaning of dynamic allocation of objects?	CO-2	L1
d.	Explain how reference parameters are used in functions.	CO-2	L2
e.	Recall the concept of protected members.	CO-3	L1
f.	Compare multiple inheritance and hierarchical inheritance.	CO-3	L2
g.	Define abstract class with example.	CO-4	L1
h.	Infer the advantages of runtime polymorphism.	CO-4	L2
i.	Recall the classes used for file I/O.	CO-5	L1
j.	Compare formatted and unformatted I/O.	CO-5	L2
SECTION-B			
2.	Analyze the difference between inline functions and normal functions with examples.	CO-1	L4
3.	Apply the concept of parameterized constructors to initialize objects with user input.	CO-2	L3
4.	Evaluate the order of constructor and destructor calls in inheritance with example.	CO-3	L5

5.	Inspect how late binding is achieved through virtual functions.	CO-4	L4
6.	Assess the role of various stream classes ifstream, ofstream, istream and ostream with example.	CO-5	L5
SECTION-C			
7.	Examine the importance of function overloading with the help of program.	CO-1	L4
8.	Simplify the meaning of Inheritance? Explain various types of inheritance with the help of suitable examples.	CO-3	L4
9.	Justify the term Dynamic Memory Allocation? Explain with the help of an example how to create and destroy objects dynamically.	CO-4	L5

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Roll No.

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Total No. of Pages:02

Total No. of Questions: 09

B.Tech (IT), Semester 3rd

COMPUTER ARCHITECTURE

Subject Code: BTES-302-18

M.Code: 76394

Date of Examination: 07-05-2026

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 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.

Q. No.	Question	CO	BL
SECTION-A			
1.	Answer briefly:		
a.	Name two types of instruction set architectures.	CO-1	L1
b.	Compare indirect and direct addressing modes.	CO-1	L2
c.	List control signals required for instruction execution.	CO-2	L1
d.	Explain role of control word in micro-programmed unit.	CO-2	L2
e.	Recall one real processor using pipelining.	CO-3	L1
f.	Summarize methods to handle branch hazards.	CO-3	L2
g.	What do you mean by program-controlled I/O.	CO-4	L1
h.	Illustrate the term Handshaking.	CO-4	L2

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i.	State need of memory interleaving.	CO-5	L1
j.	Explain the concept of miss ratio in cache.	CO-5	L2

SECTION-B

2.	Compare Von Neumann and Harvard architecture.	CO-1	L4
3.	Examine various types of control units in detail.	CO-2	L4
4.	Determine a page replacement strategy for a system with limited physical memory.	CO-4	L5
5.	Analyze various types of pipelining hazards.	CO-3	L4
6.	Explain Cache Coherence and also describe in detail the different cache coherence protocols.	CO-5	L5

SECTION-C

7.	a) Examine the role of control memory, microinstruction format, and sequencing logic in the design. b) Analyze how a machine-level instruction is executed using a sequence of microinstructions.	CO-2	L4
8.	a) Apply pipelining to execute a sequence of 4 instructions and show the overlapped execution steps. b) Use an example to show how pipeline stalls affect execution time.	CO-3	L3
9.	a) Explain Common Bus system in computer architecture. b) Compare restoring and non-restoring division methods.	CO-1	L5

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B.Tech 17 Sem-4

Roll No.

Total No. of Questions: 9

Date : 07-05-2026
Total No. of Pages: 2

B.TECH(IT), Semester-4TH
Subject Name: OPERATING SYSTEMS
Subject Code: BTIT-402-18
MCode: 77539

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

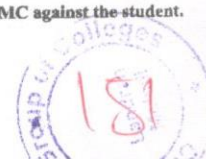
SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	What is thrashing in memory management and its impact.	CO-1	L1	2
b.	Contrast between Monolithic and Microkernel operating systems.	CO-1	L2	2
c.	Define a thread and write different states of thread.	CO-2	L1	2
d.	Interpret the concept of starvation in an operating system.	CO-2	L2	2
e.	Why is the Producer-Consumer problem considered a synchronization problem?	CO-3	L1	2
f.	Compare binary semaphores and counting semaphores.	CO-3	L2	2
g.	Recall safe state in Banker's Algorithm, why does the system avoid entering an unsafe state?	CO-4	L1	2
h.	Illustrate which deadlock handling method is used if a system forces processes to request all resources at once before execution.	CO-4	L2	2
i.	Write the purpose of a directory in a file system and state its importance.	CO-5	L1	2
j.	Contrast between single-level and hierarchical directory structures along with the objectives of a directory structure.	CO-5	L2	2
SECTION B				20
2.	Identify the role of system calls in an operating system and analyze how they act as an interface between user programs and the OS.	CO-1	L3	5
3.	Compare Long-term, Short-term, and Medium-term schedulers and analyze their role in process scheduling and memory management.	CO-2	L4	5
4.	Explain race condition and its impact on system performance with example.	CO-3	L5	5
5.	Explain different strategies used to handle deadlocks and justify when prevention is preferred over avoidance.	CO-4	L5	5
6.	A disk request queue is: 95, 180, 34, 119, 11, 123, 62, 64 Initial head position = 50 and disk size = 0-199. Evaluate for the total head movement using SCAN disk scheduling algorithm.	CO-5	L5	5
SECTION C				20
7.	Explain Peterson's solution for mutual exclusion in detail. Analyze how it satisfies the three conditions for process synchronization.	CO-3	L5	10
8.	a) For reference string: 1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5 with 3 frames, compute page faults using: FIFO Optimal page replacement algorithm b) Analyze which algorithm performs better and why.	CO-4	L4	10
9.	Explain the working of disk scheduling algorithms (FCFS, SSTF, SCAN). Provide a comparison on the basis of : a) Seek time b) Starvation c) Throughput	CO-5	L5	10

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Roll No.

Total No. of Questions: 9

Date : 14-05-2026
Total No. of Pages: 1B.TECH(IT), Semester-4TH
Subject Name: DEVELOPMENT OF SOCIETIES
Subject Code: HSMC-101-18
MCode: 77541

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	What constitutes the fundamental essence and conceptual framework of society within the context of human civilization?	CO-1	L1	2
b.	Explain that family acts as the basic unit of society.	CO-1	L2	2
c.	What is federal form of government?	CO-2	L1	2
d.	Explain the concept of republic with an example.	CO-2	L2	2
e.	Define political system with reference to power and decision-making in society.	CO-3	L1	2
f.	Compare traditional and modern social structures briefly.	CO-3	L2	2
g.	List atleast two characteristics of the pre-British economic system.	CO-4	L1	2
h.	Describe the role of village economy in Gandhian development model.	CO-4	L2	2
i.	What is meant by decentralization?	CO-5	L1	2
j.	Explain the concept of Swaraj.	CO-5	L2	2
SECTION B				20
2.	Identify a real-life situation where society influences individual decisions.	CO-1	L3	5
3.	Analyze the major features of democracy and monarchy with suitable examples.	CO-2	L4	5
4.	Interpret the relationship between human beings and society and justify its importance in solving local social issues.	CO-3	L5	5
5.	Evaluate the concept of class struggle in Marxism and justify its societal implications.	CO-4	L5	5
6.	Explain modern concept of development, to suggest practical measures to reduce social inequality and conflict in society.	CO-5	L5	5
SECTION C				20
7.	Evaluate the role of family, clan, and society in shaping the social structure of local communities and justify their importance in social development.	CO-1	L5	10
8.	Compare parliamentary and presidential forms of government and analyze which system is more effective for public administration.	CO-2	L4	10
9.	Compare the barter system and Jajmani system by analyzing their strengths and limitations in traditional economic development.	CO-4	L4	10

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Roll No.

Date : 11-05-2026

Total No. of Questions: 9

Total No. of Pages: 2

B.TECH(IT), Semester-4TH
Subject Name: DESIGN & ANALYSIS OF ALGORITHMS

Subject Code: BTIT-403-18

M. Code: 77540

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

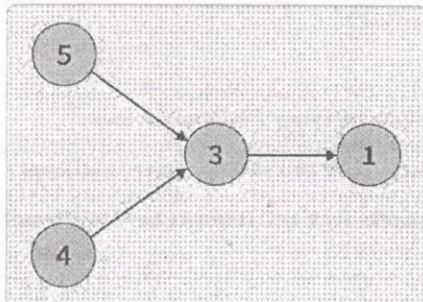
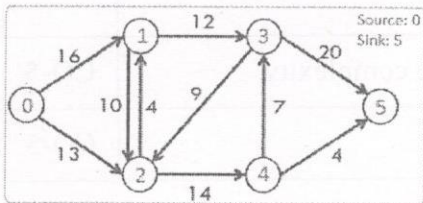
SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	Define asymptotic notations: Big O, Big Theta, Big Omega.	CO-1	L1	2
b.	Summarize the features of Master's theorem	CO-1	L2	2
c.	Write the characteristics of Brute force method.	CO-2	L1	2
d.	Differentiate between 0/1 Knapsack and Fractional Knapsack problem.	CO-2	L2	2
e.	What is Breadth First Search (BFS)?	CO-3	L1	2
f.	Differentiate Spanning tree and Minimum Spanning tree	CO-3	L2	2
g.	How randomness improves the performance of certain algorithms?	CO-4	L1	2
h.	Summarize the working principle of randomized algorithms with a suitable example.	CO-4	L2	2
i.	Define tractable problem with respect to time complexity.	CO-5	L1	2
j.	State the relationship between P and NP.	CO-5	L2	2
SECTION B				20
2.	Apply Master theorem to solve $T(n)=8T(n/2)+n^2$.	CO-1	L3	5
3.	Compare backtracking and branch-and-bound techniques by examining their search strategies and pruning mechanisms.	CO-2	L4	5



Q No.	Description	CO	BL	Marks
4.	Perform topological sorting on given Directed Acyclic Graph (DAG). 	CO-3	L3	5
5.	Critique the conditions under which heuristic algorithms outperform exact algorithms, providing logical reasoning.	CO-4	L5	5
6.	Explain the various challenges in solving NP-hard problems with example.	CO-5	L5	5
SECTION C				20
7.	Examine the DP table and compute the optimal profit by solving the 0/1 Knapsack problem using Dynamic Programming for the items (profit, weight) = (10,5), (40,4), (30,6), (50,3) and capacity = 10.	CO-2	L4	10
8.	Compute Maximum flow using Ford-Fulkerson algorithm for given graph. 	CO-3	L3	10
9.	Validate the role of Cook's theorem and its long-term significance in modern computational complexity.	CO-5	L5	10

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Roll No.

Total No. of Questions: 09

Total No. of Pages: 1

B.Tech IT, Semester 5th
CYBER LAWS AND IPR
Subject Code: BTIT509-18

M.Code: 78263

Date of Examination: 09-05-2026

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 **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.

Q. No.	Question	CO	BL
SECTION-A			
1.	Answer briefly:		
a.	State one example of a Distributed Denial of Service (DDoS) attack.	CO-1	L1
b.	Classify the following into hacking, malware, or DDoS: ransomware, botnet, password cracking.	CO-1	L2
c.	Interpret why fraud is considered a cybercrime.	CO-1	L2
d.	What is the role of Indian law enforcement in cybercrime?	CO-2	L1
e.	Illustrate how new technologies can help to fight cybercrime.	CO-2	L2
f.	Compare offences and contraventions under IT Act.	CO-2	L2
g.	Name two rights of a copyright owner.	CO-3	L1
h.	Compare Lockean and Hegelian justifications.	CO-3	L2
i.	Name the doctrine that permits limited use of copyrighted work with example.	CO-4	L1
j.	Classify infringement into direct and indirect categories with examples.	CO-4	L2
SECTION-B			
2.	Apply the concept of cyber forensics to identify evidence in a DDoS attack.	CO-1	L3
3.	Contrast traditional crimes with cybercrimes by analysing their key features.	CO-2	L4
4.	Explain the rights of reproduction and broadcasting in the context of digital platforms.	CO-3	L5
5.	Make use of "Fair Use Exceptions" to justify usage in news reporting.	CO-4	L3
6.	Explain whether indirect infringement is harder to prove than direct infringement with example.	CO-4	L5
SECTION-C			
7.	Build a case study comparing Indian and global cybercrime enforcement approaches.	CO-2	L3
8.	Analyze the ownership rights of different categories of copyright (literary works, software, derivative works) with real-world examples	CO-3	L4
9.	Explain in detail about privacy and security in digital law and build a framework for maintaining both without compromising individual rights.	CO1	L5

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Roll No.

Total No. of Pages: 02

Total No. of Questions: 09

B.Tech (IT), Semester 5th
PROGRAMMING IN JAVA

Subject Code: BTIT503-18

M.Code: 78258

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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	What is JVM in Java?	CO-1	L1
b.	Explain the concept of bytecode.	CO-1	L2
c.	How method overloading works?	CO-2	L1
d.	Illustrate the use of "this" keyword.	CO-2	L2
e.	Write the use of super keyword?	CO-3	L1
f.	Demonstrate try-catch block.	CO-3	L2
g.	Define thread in Java.	CO-4	L1
h.	Explain different States of a Thread.	CO-4	L2
i.	What is init() method in applet?	CO-5	L1
j.	Define server socket.	CO-5	L2
SECTION-B			
2.	Compare break and continue statements with suitable examples	CO-1	L4
3.	Build a Java program demonstrating constructor overloading.	CO-2	L3
4.	Explain the role of packages in modular programming with the help of example .	CO-3	L5
5.	Analyze difference between Thread Class and Runnable Interface for Multithreading with the help of a program.	CO-4	L4
6.	Compare TCP and UDP in Java networking.	CO-5	L5
SECTION-C			
7.	(a) Analyze Java's platform independence compared to C++ language. (b) Compare implicit type conversion and explicit casting with examples.	CO-1	L4



Roll No.

Total No. of Pages: 02

Total No. of Questions: 09

B.Tech (Information Technology), Semester-5th

SOFTWARE ENGINEERING

Subject Code: BTIT504-18

M.Code: 78259

Date of Examination: 25-05-2026

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 **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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define Prototyping model.	CO-1	L1
b.	Compare Functional and Non-functional requirements.	CO-1	L2
c.	What is Cost Estimation?	CO-2	L1
d.	Interpret the importance of Risk Analysis.	CO-2	L2
e.	Define Capability Maturity Model (CMM).	CO-3	L1
f.	Explain importance of Software Maintenance.	CO-3	L2
g.	Define Data Flow Diagram (DFD).	CO-4	L1
h.	Explain why coding standards are necessary?	CO-4	L2
i.	Define Unit Testing.	CO-5	L1
j.	Interpret the role of Reliability metrics.	CO-5	L2
SECTION-B			
2.	Compare user requirements and system requirements, highlighting their purpose and role in the software development process.	CO-1	L4
3.	Apply PERT to estimate time for a small project.	CO-2	L3
4.	Justify the use of CMMI with modern software practices. Does it improve project quality?	CO-3	L5
5.	Examine how coding standards improve maintainability.	CO-4	L4
6.	Explain a set of test cases for an Online Shopping Cart.	CO-5	L5



SECTION-C			
7.	Analyze the steps of requirement analysis. Are they really needed before starting development?	CO-1	L4
8.	Analyze the role of software reuse in software projects and discuss how Six Sigma principles enhance software quality and defect reduction.	CO-3	L4
9.	Assess the trade-offs between Object-Oriented and Function-Oriented design.	CO-4	L5

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Roll No.

Total No. of Pages: 02

Total No. of Questions: 09

B.Tech (Information Technology), Semester-5th

FORMAL LANGUAGE AND AUTOMATA THEORY

Subject Code: BTIT 501-18

M.Code: 78256

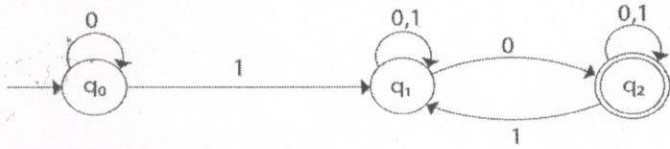
Date of Examination: 19-05-2025

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 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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define alphabet in formal language theory.	CO-1	L1
b.	Explain the concept of derivation in grammars.	CO-1	L2
c.	What is the difference between NFA and ϵ -NFA?	CO-2	L1
d.	Explain closure properties of CFL.	CO-2	L2
e.	List the components of a CFG.	CO-3	L1
f.	Compare between ambiguous and unambiguous grammar.	CO-3	L2
g.	State an example of TM recognized language.	CO-4	L1
h.	Illustrate a simple LBA derivation.	CO-4	L2
i.	What is Church-Turing thesis?	CO-5	L1
j.	Compare P and NP problems.	CO-5	L2
SECTION-B			
2.	Analyze the differences between alphabet, language, grammar and string with suitable examples.	CO-1	L4
3.	Convert a given NFA into its equivalent DFA. 	CO-2	L3
4.	Explain the pumping lemma for CFLs with examples.	CO-3	L5
5.	Examine the variants of Turing machines and their equivalence.	CO-4	L4

6.	Assess the significance of the Cook-Levin theorem in complexity theory.	CO-5	L5
SECTION-C			
7.	Assess the role of the Chomsky hierarchy in organizing different language classes with an example.	CO-1	L3
8.	Analyze the procedure and eliminate left recursion from the following Grammar. E→E+T/T T→T*F/F F→(E)/id	CO-3	L4
9.	Evaluate DPDA which accepts the language $L = \{wcw^R \mid w \in \{a, b\}^*, c \in \Sigma\}$.	CO-4	L5

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Total No. of Questions: 09

B. Tech (IT), Semester 5th

UNIVERSAL HUMAN VALUES-2

Subject Code: HSMC 122-18

M. Code: 78260

Date of Examination: 14-05-2026

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 **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.

Q.N	Question	CO	BL
0	SECTION-A		
1.	Answer briefly:		
a.	Define Value Education in the context of human development. मानव विकास के संदर्भ में मूल्य शिक्षा को परिभाषित करें। मनुषी हित्वाप से मूल्य हित्वा हित्वा मूल्य शिक्षा मूल्य हित्वा हित्वा	CO1	L1
b.	Explain the role of Natural Acceptance as the innate guideline for responsible living. मानव विकास के संदर्भ में मूल्य शिक्षा को परिभाषित करें। जिम्मेदार जीवन के लिए जन्मजात दिशानिर्देश के रूप में प्राकृतिक स्वीकृति की भूमिका की व्याख्या करें। मनुषी हित्वाप से मूल्य हित्वा हित्वा मूल्य शिक्षा मूल्य हित्वा हित्वा	CO1	L2
c.	How gratitude strengthens human relationships? कृतज्ञता मानव संबंधों को कैसे मजबूत करती है? कृतज्ञता मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी	CO2	L1
d.	Classify the role of human for balancing in nature. प्रकृति में संतुलन के लिए मानव की भूमिका को वर्गीकृत करें। वृत्तवृत्त हित्वा मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी मनुषी	CO2	L2
e.	What is the difference between Natural Acceptance and Liking-Disliking? प्रकृति में संतुलन के लिए मानव की भूमिका को वर्गीकृत करें। प्राकृतिक स्वीकृति और पसंद-नापसंद में क्या अंतर है?	CO3	L1

f.	Summarize the role of education in developing harmony in human relationships. मानव संबंधों में सद्भाव विकसित करने में शिक्षा की भूमिका को संक्षेप में बताइए। मनुषी मधुपां हिंस मसञ्हादन पेसा ववन हिंस मिंधिआ सी बुमिवा सा मैथेय लिसे।	CO3	L1
g.	How self-exploration helps in achieving continuous happiness and prosperity? आत्म-अन्वेषण निरंतर सुख और समृद्धि प्राप्त करने में कैसे मदद करता है? महै-भेम निर्डंडर धुमी अडे धुमगाली पूपड ववन हिंस विदैं भस्त वतसी तै?	CO4	L1
h.	Interpret the concept of coexistence using a real-world example. एक वास्तविक दुनिया के उदाहरण का उपयोग करके सह-अस्तित्व की अवधारणा की व्याख्या करें। हिंव हामजहिब-ममाव छितावट सी दवडें ववसे ठेरे मति-ठेंस से मवल्लप सी हिआधिआ वते।	CO4	L2
i.	Define the concepts of recyclability and self-regulation in natural systems. प्राकृतिक प्रणालियों में पुनर्चक्रण और स्व-विनियमन की अवधारणाओं को परिभाषित करें। वुस्वडी पूरालीआं हिंस तीमाहीवलेखिलटी अडे महै-निर्मंडूट दीआं पातनाहां ठूं पविङामिड वते।	CO5	L1
j.	Illustrate the meaning of "Body as an instrument of I" in daily life. दैनिक जीवन में "मैं के एक साधन के रूप में शरीर" के अर्थ को स्पष्ट कीजिए। वेमाना मीहन हिंस "मैं से हिंव मापन से तुप हिंस मतीरा" से अतव ठूं मपमत वते।	CO5	L2
2.	Categorize self-regulation mechanisms across ecosystems, and propose how understanding these processes can inform environmental management and conservation strategies. पारिस्थितिकी तंत्रों में स्व-विनियमन तंत्र को वर्गीकृत करें, और प्रस्ताव दें कि इन प्रक्रियाओं को समझने से पर्यावरण प्रबंधन और संरक्षण रणनीतियों को कैसे सूचित किया जा सकता है।	CO1	L4



SECTION-C

ਵਾਤਾਵਰਣ ਪ੍ਰਣਾਲੀਆਂ ਵਿੱਚ ਸਮੇਂ-ਨਿਯੰਤ੍ਰਣ ਵਿਧੀਆਂ ਨੂੰ ਸੇਵੀਯੋਗ ਕਰਨਾ ਇਹ ਮੁਸ਼ਕਲ ਦਿੰਦਾ ਹੈ ਕਿ ਇਹ ਪ੍ਰਕਿਰਿਆਵਾਂ ਨੂੰ ਸਮਝਣ ਨਾਲ ਵਾਤਾਵਰਣ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮੰਡਲ ਗਰਮੀਆਂ ਨੂੰ ਕਿਵੇਂ ਸੁੰਚਿਤ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।	CO2	L3
3. Identify how various human activities disrupt the recyclability of nutrients and matter in ecosystems, and analyze their long-term impacts on ecological balance, sustainability, and resource availability. यह पहचानें कि विभिन्न मानव गतिविधियाँ पारिस्थितिकी तंत्र में पोषक तत्वों और पदार्थों की पुनर्चक्रण क्षमता को कैसे बाधित करती हैं, और पारिस्थितिक संतुलन, स्थिरता और संसाधन उपलब्धता पर उनके दीर्घकालिक प्रभावों का विश्लेषण करें। ਪਛਾਣ ਕਰੋ ਕਿ ਕਿਵੇਂ ਵੱਖ-ਵੱਖ ਮਨੁੱਖੀ ਗਤੀਵਿਧੀਆਂ ਵਾਤਾਵਰਣ ਪ੍ਰਣਾਲੀ ਵਿੱਚ ਪੋਸ਼ਟਿਕ ਤੱਤਾਂ ਅਤੇ ਪਦਾਰਥ ਦੀ ਰੀਸਾਈਕਲੇਬਿਲਟੀ ਨੂੰ ਵਿਘਨ ਪਾਉਂਦੀਆਂ ਹਨ, ਅਤੇ ਵਾਤਾਵਰਣ ਸੰਤੁਲਨ, ਸਥਿਰਤਾ ਅਤੇ ਸਰੋਤਾਂ ਦੀ ਉਪਲਬਧਤਾ ਉੱਤੇ ਉਨ੍ਹਾਂ ਦੇ ਲੰਬੇ ਸਮੇਂ ਦੇ ਪ੍ਰਭਾਵਾਂ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰਦੀਆਂ ਹਨ।	CO4	L5
4. Explain the major causes of imbalance in nature, and evaluate their impact on ecological stability, biodiversity, and long-term environmental sustainability. प्रकृति में असंतुलन के प्रमुख कारणों की व्याख्या करें और पारिस्थितिक स्थिरता, जैव विविधता और दीर्घकालिक पर्यावरणीय स्थिरता पर उनके प्रभाव का मूल्यांकन करें। ਕੁਦਰਤ ਵਿੱਚ ਅਸੰਤੁਲਨ ਦੇ ਪ੍ਰਮੁੱਖ ਕਾਰਨਾਂ ਦੀ ਵਿਆਖਿਆ ਕਰੋ ਅਤੇ ਵਾਤਾਵਰਣਕ ਸਥਿਰਤਾ, ਜੈਵ ਵਿਭਿੰਨਤਾ ਅਤੇ ਲੰਬੇ ਸਮੇਂ ਦੀ ਵਾਤਾਵਰਣਕ ਸਥਿਰਤਾ ਉੱਤੇ ਉਨ੍ਹਾਂ ਦੇ ਪ੍ਰਭਾਵ ਦਾ ਮੁਲਾਂਕਣ ਕਰੋ।	CO3	L4
5. Analyze the role of justice in ensuring harmony within individuals, families, society, and the broader natural environment. व्यक्तियों, परिवारों, समाज और व्यापक प्राकृतिक पर्यावरण के भीतर संद्रढ़ सुनिश्चित करने में न्याय की भूमिका का विश्लेषण करें। ਵਿਅਕਤੀਆਂ, ਪਰਿਵਾਰਾਂ, ਸਮਾਜ ਅਤੇ ਵਿਆਪਕ ਕੁਦਰਤੀ ਵਾਤਾਵਰਣ ਵਿੱਚ ਸਦਭਾਵਨਾ ਨੂੰ ਯਕੀਨੀ ਬਣਾਉਣ ਵਿੱਚ ਨਿਆਂ ਦੀ ਭੂਮਿਕਾ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰੋ।	CO5	L5
6. Explain the significance of natural acceptance as the foundation for ethical conduct. नैतिक आचरण की नींव के रूप में प्राकृतिक स्वीकृति के महत्व को समझाइए। ਨੈਤਿਕ ਆਚਰਣ ਦੀ ਨੀਂਹ ਵਜੋਂ ਕੁਦਰਤੀ ਪਵਾਨਗੀ ਦੇ ਮਹੱਤਵ ਨੂੰ ਸਮਝਾਓ।		

3|M-78260

4|M-78260

Roll No.

Total No. of Questions: 9

Date : 08-05-2026
Total No. of Pages: 2B.TECH(IT), Semester-6TH
Subject Name: MACHINE LEARNING
Subject Code: BTIT608-18
MCode: 79627

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks												
SECTION A				20												
a.	Define Well-posed Learning problem with example.	CO-1	L1	2												
b.	Explain the major issues involved in designing a machine learning system.	CO-1	L2	2												
c.	List any two techniques used in Data Transformation.	CO-2	L1	2												
d.	Explain the meaning of Feature Scaling with example.	CO-2	L2	2												
e.	What is the R-Square (R^2) value used for?	CO-3	L1	2												
f.	Explain Polynomial Regression with an example.	CO-3	L2	2												
g.	Define Gini Index used in Decision Tree construction.	CO-4	L1	2												
h.	Describe the concept of pruning and hyperplane in classification.	CO-4	L2	2												
i.	What is the purpose of the selection operation in a genetic algorithm?	CO-5	L1	2												
j.	Explain the basic idea of the Apriori algorithm.	CO-5	L2	2												
SECTION B				20												
2.	Construct the complete process of designing a learning system for a "Checkers Game".	CO-1	L3	5												
3.	Compare different data pre-processing techniques/methods and justify when each technique should be applied.	CO-2	L4	5												
4.	Evaluate the Mean Square Error and Root Mean Square Error for the following data: <table border="1"><thead><tr><th>Height (X)</th><th>Weight (Y)</th></tr></thead><tbody><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>15</td></tr><tr><td>4</td><td>20</td></tr><tr><td>5</td><td>30</td></tr></tbody></table>	Height (X)	Weight (Y)	1	5	2	10	3	15	4	20	5	30	CO-3	L3	5
Height (X)	Weight (Y)															
1	5															
2	10															
3	15															
4	20															
5	30															
5.	Explain the working of the K-Nearest Neighbors algorithm, highlighting the role of distance metrics and the impact of the value of K on classification performance.	CO-4	L5	5												
6.	Explain the affect of mutation and crossover operations on the performance of a Genetic Algorithm and recommend the best strategy for maintaining population diversity.	CO-5	L5	5												
SECTION C				20												
7.	(i) Simplify data reduction techniques that help in handling large datasets. (ii) Examine the trade-off between data size reduction and information loss.	CO-2	L4	10												
8.	Apply Simple Linear Regression to predict employee salary based on years of experience using a suitable numerical example.	CO-3	L3	10												
9.	Appraise the Naïve algorithm for finding association rules and explain the importance of support and confidence in this algorithm	CO-5	L5	10												

Roll No. Date : 05-05-2025
Total No. of Pages: 3

Total No. of Questions: 9

B.TECH(IT), Semester-6TH
Subject Name: AGILE SOFTWARE DEVELOPMENT
Subject Code: BTIT609-18 22
Mode: - 79628

Max. Marks: 60

Time: 03:00 Hrs.

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	Why is the Agile Manifesto important for modern software development practices?	CO-1	L1	2
b.	Illustrate the importance of customer collaboration in Agile.	CO-1	L2	2
c.	Why is the Interface Segregation Principle important for modular system design?	CO-2	L1	2
d.	Explain the objectives of SOLID principles.	CO-2	L2	2
e.	Why is the Product Backlog important in Scrum-based project management?	CO-3	L1	2
f.	Illustrate the structure of a user story.	CO-3	L2	2
g.	How does Kanban improve workflow efficiency?	CO-4	L1	2
h.	Summarize the key principles of XP.	CO-4	L2	2
i.	What is a test suite in Agile testing?	CO-5	L1	2
j.	Illustrate the role of test automation in enabling rapid feedback in Agile testing.	CO-5	L2	2
SECTION B				20
2.	Construct the Agile development life cycle for a small software application.	CO-1	L3	5
3.	Analyze the effects of violating the Liskov Substitution Principle in object-oriented systems.	CO-2	L4	5
4.	Compare Sprint Backlog and Product Increment in terms of their contribution to project progress.	CO-3	L5	5
5.	Apply the principles of Kanban workflow to improve task movement across different workflow stages.	CO-4	L3	5
6.	Explain the role of continuous integration in minimizing integration risks and improving release reliability.	CO-5	L5	5
SECTION C				20
7.	Analyze the Dependency Inversion Principle in software design and its effect on reducing system dependency.	CO-2	L4	10
8.	Analyze the twelve practices of Extreme Programming. Examine how these practices collectively improve software quality and team productivity.	CO-4	L4	10
9.	Interpret the significance of Agile Testing Quadrants in organizing testing activities and ensuring comprehensive test coverage in Agile projects.	CO-5	L5	10

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.

Roll No. Date : 19-05-2026
Total No. of Pages: 1

Total No. of Questions: 9

B.TECH(Information Technology), Semester-6th
Subject Name: CLOUD COMPUTING
Subject Code: BTIT-613-18
M Code: 79632

Max. Marks: 60

Time: 03:00 Hrs.

INSTRUCTIONS TO CANDIDATES:

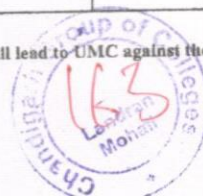
SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	List any two characteristics of cloud computing.	CO-1	L1	2
b.	Explain burst workload pattern in cloud.	CO-1	L2	2
c.	Compare grid computing and utility computing.	CO-1	L2	2
d.	How does Multitenancy allows sharing of resources and costs across a large pool of users?	CO-2	L1	2
e.	Compare elasticity and scalability.	CO-2	L2	2
f.	Summarize the working of a hosted hypervisor with one suitable example.	CO-2	L2	2
g.	What is pay-as-you-go model?	CO-3	L1	2
h.	Summarize migration path to cloud.	CO-3	L2	2
i.	Define user account hijacking.	CO-4	L1	2
j.	Give an explanation of insider threat with one relevant example.	CO-4	L2	2
SECTION B				20
2.	Implement cloud computing in healthcare systems for patient records, telemedicine services, and remote diagnostics.	CO-1	L3	5
3.	Investigate the role of isolation in preventing one virtual machine from affecting another on the same host.	CO-2	L4	5
4.	Defend the adoption of SaaS applications in educational institutions for email, collaboration, and learning systems.	CO-3	L5	5
5.	Recommend hybrid cloud deployment for retail companies that need secure data storage and public-facing scalability.	CO-3	L5	5
6.	Contrast genuine authentication practices with phishing-based credential theft methods in cloud usage.	CO-4	L4	5
SECTION C				20
7.	Illustrate the procedure for installing and configuring a Type-1 hypervisor in an enterprise server environment. Explain how virtual machines are created and managed after installation.	CO-2	L3	10
8.	Recommend the best combination of IaaS, PaaS, and SaaS models for a startup developing mobile applications and online services with reasons.	CO-3	L5	10
9.	Defend the need for disaster recovery planning in cloud environments despite provider redundancy claims. Use suitable arguments.	CO-4	L5	10

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Roll No. Date : 15-05-2026
Total No. of Pages: 1

Total No. of Questions: 9

B.TECH(IT), Semester-6TH
Subject Name: WEB TECHNOLOGIES
Subject Code: BTIT602-18
M. Code: 79624

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	Name two services provided by an ISP.	CO-1	L1	2
b.	Illustrate the concept of Web Server and give any 2 examples of web server.	CO-1	L2	2
c.	Name the tags used to embed video and audio in HTML5.	CO-2	L1	2
d.	Explain the way HTML5 handles multimedia content without external plugins.	CO-2	L2	2
e.	What is meant by a CSS selector?	CO-3	L1	2
f.	Explain two JavaScript events with suitable examples.	CO-3	L2	2
g.	How cookie is created in PHP?	CO-4	L1	2
h.	Explain the purpose of strlen() function in PHP.	CO-4	L2	2
i.	List two advantages and disadvantages of AJAX.	CO-5	L1	2
j.	Differentiate between GET and POST methods in AJAX.	CO-5	L2	2
SECTION B				20
2.	Construct a simple model showing the working of a web browser.	CO-1	L3	5
3.	Construct a registration form using HTML for different user inputs such as name, email, password, gender, and contact details.	CO-2	L3	5
4.	Determine the use of addEventListener() for handling click and mouseover events in JavaScript with a simple example.	CO-3	L5	5
5.	Explain the steps required to connect a PHP program to a MySQL server and justify their importance in database connectivity.	CO-4	L5	5
6.	Explain the role of AJAX server-side scripts in handling client requests.	CO-5	L5	5
SECTION C				20
7.	Analyze the role of hyperlinks in structuring interconnected web documents by developing an HTML document that connects multiple web pages.	CO-2	L4	10
8.	Determine the most effective approach for managing sessions in PHP for storing and retrieving data, and justify your choice with suitable example.	CO-4	L5	10
9.	Compare JSON and XML and support the preference for JSON with valid reasons.	CO-5	L5	10

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.



Roll No.

Total No. of Questions: 9

Date : 12-05-2026
Total No. of Pages: 2B.TECH(CSE IOT), Semester-6TH
Subject Name: INTRUSION DETECTION SYSTEM
Subject Code: BTITCS605-20

M. Code: 93415

Time: 03:00 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	What was the primary purpose of the early 'audit' systems that led to modern IDS?	CO-1	L1	2
b.	Differentiate between an 'attack' and a 'threat' with a simple example.	CO-1	L2	2
c.	Define 'Vulnerability Analysis' in one sentence.	CO-2	L1	2
d.	Contrast 'signature-based analysis' and 'anomaly-based analysis' schemes used in IDS.	CO-2	L2	2
e.	List the different modes in which Snort can operate.	CO-3	L1	2
f.	Describe how running Snort on multiple network interfaces affects its ability to monitor traffic compared to a single interface.	CO-3	L2	2
g.	List the fields typically found in a Snort rule header.	CO-4	L1	2
h.	Describe the role of the include directive inside the Snort configuration file.	CO-4	L2	2
i.	List any two types of preprocessors used in Snort.	CO-5	L1	2
j.	Illustrate the purpose of using MySQL with Snort.	CO-5	L2	2
SECTION B				20
2.	Apply your understanding of NIDS and HIDS to a scenario where you need to protect a sensitive customer database server. Demonstrate which system you would prioritize, and show how you would justify this choice using practical security considerations.	CO-1	L3	5
3.	Categorize the factors (target system, risk tolerance, testing scope) into a decision matrix to help a security analyst choose between a credentialed and a non-credentialed scan.	CO-2	L4	5
4.	Appraise the troubleshooting steps to resolve library dependency errors during Snort installation and successfully complete the compilation process. Rank the key commands used and defend their order.	CO-3	L5	5
5.	A rule with content:"[0a]"; fails to detect newline characters in HTTP traffic. You suspect the http_inspect preprocessor is interfering. Choose whether to disable the preprocessor or rewrite the rule. Defend your choice.	CO-4	L5	5
6.	Criticize the rule header alert tcp any any -> 192.168.1.0/25 80 by separating the systems under monitoring, classifying the protocol and port, and concluding the action taken by Snort upon a match.	CO-5	L5	5
SECTION C				20
7.	Develop a deception-based IDS using honeypots and honeytokens. Specify deployment, alerts, integration with traditional IDS, and analyze ethical considerations.	CO-2	L3	10
8.	Compare the following two commands. Explain which one uses more CPU and why. Command A: snort -i eth0 -c /etc/snort/snort.conf Command B: snort -i eth0 -b -c /etc/snort/snort.conf	CO-3	L4	10
9.	Formulate a hypothesis about the relationship between the granularity of an audit trail and the accuracy of a subsequent intrusion detection analysis.	CO-1	L5	10

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Roll No. Date : 12-05-2026
Total No. of Pages: 2

Total No. of Questions: 9

B.TECH(IT), Semester-6TH
Subject Name: BIG DATA
Subject Code: BTIT601-18 E2
M Code: - 79623

Max. Marks: 60

Time: 03:00 Hrs.

INSTRUCTIONS TO CANDIDATES:

SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

SECTION C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

Q No.	Description	CO	BL	Marks
SECTION A				20
a.	List the non-definitional traits associated with Big Data.	CO-1	L1	2
b.	Outline the key limitations of conventional data processing systems.	CO-1	L2	2
c.	Name any two tools that belong to the Hadoop ecosystem.	CO-2	L1	2
d.	Interpret the term YARN in Hadoop.	CO-2	L2	2
e.	Define the BSON data type used for document storage in MongoDB.	CO-3	L1	2
f.	Explain the syntax and use of the find() command in MongoDB.	CO-3	L2	2
g.	Why is SerDe used in Hive?	CO-4	L1	2
h.	Compare simple and complex data types in Pig.	CO-4	L2	2
i.	What do you mean by data manipulation in R Language?	CO-5	L1	2
j.	Explain about dataframes in R language.	CO-5	L2	2
SECTION B				20
2.	Identify the 3Vs of Big Data with suitable examples.	CO-1	L3	5
3.	Apply the MapReduce paradigm to a given dataset and explain how the Map and Reduce phases process the data.	CO-2	L3	5
4.	Explain Cassandra architecture and features and justify its suitability for large-scale distributed systems.	CO-3	L5	5
5.	Interpret the concept of Hive Query Language in Hive with the help of an example.	CO-4	L5	5
6.	Compare the process of creating objects in R with their usage for data storage and computational operations.	CO-5	L5	5
SECTION C				20
7.	Assume a company grows data from GBs to TBs and PBs and analyze why RDBMS fails and how Hadoop solves the problem?	CO-2	L4	10
8.	Simplify the execution plan of Apache Hive by explaining the stages involved in processing a Hive query.	CO-4	L5	10
9.	Compare the Following: a. Arithmetic and Logical expressions in R. b. Built in and user defined functions in R.	CO-5	L5	10

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9.	(a) Appraise any two Quality Control tools to address recurring production defects with example. (b) Explain how modern tools enhances the Software Quality Assurance activities compared to traditional QC tools.	CO-4	L5
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Roll No.

Total No. of Pages: 02

Total No. of Questions: 09

B. Tech (IT), Semester 7th
ARTIFICIAL INTELLIGENCE

Subject Code: BTEC 908A-18

M. Code: 90678

Date of Examination: 16-05-2025

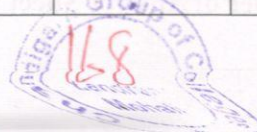
Time: 3 Hrs.

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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	What is meant by decision rules?	CO-1	L1
b.	Interpret the importance of knowledge representation.	CO-1	L2
c.	Interpret the need for uncertainty handling.	CO-1	L2
d.	State the McCulloch-Pitts model.	CO-2	L1
e.	Compare biological and artificial neurons.	CO-2	L2
f.	Explain supervised and unsupervised learning.	CO-2	L2
g.	What is evolutionary computation?	CO-3	L1
h.	Demonstrate how GA helps in optimization.	CO-3	L2
i.	List steps to create a fuzzy inference system (FIS).	CO-4	L1
j.	Explain role of mutation probability.	CO-4	L2
SECTION-B			
2.	Analyze the differences between rule-based reasoning and model-based reasoning with examples.	CO-1	L4
3.	Apply Adaline learning to compute updated weights for a given training dataset.	CO-2	L3
4.	Evaluate different crossover methods and justify which one provides better genetic diversity.	CO-3	L5
5.	Analyze the training behavior of multilayer neural networks with respect to overfitting.	CO-4	L4
6.	Compare Mamdani and Sugeno fuzzy inference system (FIS) and discuss its output computation, rule structure, and performance differences.	CO-3	L5
SECTION-C			
7.	Inspect the internal mechanics of linguistic reasoning and analyze its usefulness in real-world fuzzy systems.	CO-1	L4



8.	Examine how crossover and mutation rates influence the diversity and performance of a Genetic Algorithm. Discuss their impact on avoiding premature convergence.	CO-3	L4
9.	(a) Recommend a chromosome encoding scheme to solve a Genetic Algorithm based optimization problem. (b) Assess the need of ANN training parameters for convergence and accuracy of the model-based systems.	CO-4	L5

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Roll No.

Total No. of Pages:2

Total No. of Questions: 09

B.Tech (Information Technology) Semester-7th

DATAWAREHOUSING AND MINING

Subject Code: BTIT 706-18

M.Code: 90558

Date of Examination: 06-05-2026

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 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.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define OLAP operations?	CO-1	L1
b.	Illustrate the performance of data cube computation.	CO-1	L2
c.	List the steps of the Apriori algorithm.	CO-2	L1
d.	Explain the concept of dynamic itemset counting.	CO-2	L2
e.	Define search engine architecture.	CO-3	L1
f.	Explain the functioning of page ranking algorithms.	CO-3	L2
g.	What is the purpose of data classification?	CO-4	L1
h.	Interpret the usage of classification algorithms for data prediction.	CO-4	L2
i.	What is the purpose of web mining software?	CO-5	L1
j.	Explain the role of hierarchy and locality in web data.	CO-5	L2
SECTION-B			
2.	Analyze the relationship between OLAP and data warehousing in business decision-making.	CO-1	L4
3.	Develop a decision tree classifier for a sample dataset and interpret the result.	CO-2	L3
4.	Evaluate the accuracy and reliability of search engine ranking algorithms.	CO-3	L5
5.	Compare the effectiveness of clustering and classification for social data analysis.	CO-4	L4
6.	Evaluate the effectiveness of web mining tools in supporting decision-making in organizations.	CO-5	L5
SECTION-C			
7.	Develop a multidimensional OLAP cube to analyze sales and inventory data across different regions.	CO-1	L4

8.	Examine the influence of search engine ranking algorithms on the retrieval of relevant information.	CO-3	L4
9.	Assess the impact of association rule mining in identifying behavioural patterns related to online safety.	CO-4	L5

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Roll No.

Total No. of Questions: 09

B.Tech (IT), Semester 7th

SOFTWARE PROJECT MANAGEMENT

Subject Code: BTIT702-18

M.Code: 90550

Date of Examination: 30-04-2026

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 **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.

Q.No.	Question	CO	BL
SECTION-A			
1.	Answer briefly: Define the terms Software process and Process model.	CO-1	L1
a.			
b.	Outline the significance of stepwise planning.	CO-1	L2
c.	What is cash flow forecasting?	CO-2	L1
d.	Differentiate between project costing and project evaluation.	CO-2	L2
e.	List two types of risks in projects.	CO-3	L1
f.	Describe the role of critical path in scheduling.	CO-3	L2
g.	What do you mean by Earned Value analysis.	CO-4	L1
h.	Classify various stages of Contract Placement.	CO-4	L2

i.	State two characteristics of Hackman Job model.	CO-5	L1
j.	Explain the role of groups in software projects.	CO-5	L2
SECTION-B			
2.	Compare plan-driven and agile models with respect to time and cost.	CO-1	L4
3.	Analyze the effect of schedule compression on project quality.	CO-2	L4
4.	Express the significance of Project sequencing.	CO-3	L3
5.	Justify Supply Chain Management (SCM) as a tool for project stability.	CO-4	L5
6.	Explain Capability Maturity Model Integration (CMMI) as a framework for quality assurance.	CO-5	L5
SECTION-C			
7.	Construct a simple cash flow forecasting table for a project.	CO-2	L3
8.	Compare Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM) in simple terms with examples.	CO-4	L4
9.	Explain a small test plan for an online banking software.	CO-5	L5

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1/M-90550



2/M-90550