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END SEMESTER EXAMINATION, DECEMBER - 2024**BCA Semester – V****Course Name: Software Engineering****Course Code: BCA301****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q1. Objectives Type Questions (Attempt All)****(10X2=20)**

a.	What is the primary goal of software engineering? A) Developing hardware components B) Producing high-quality code C) Managing software projects D) Building software systems efficiently	CO2	1
b.	Which part of the software life cycle is CASE primarily designed to support? A) Software Design B) Software Testing C) Project Management D) Software Maintenance	CO3	2
c.	What does the acronym SQA stand for in software engineering? A) Software Quality Assessment B) Software Quality Assurance C) System Quality Assessment D) Software Query Analysis	CO4	2
d.	Which testing technique focuses on verifying the internal logic and code structure of the software? A) Black-Box Testing B) White-Box Unit Testing C) Integration Testing D) System Testing	CO1	1
e.	Which analysis modeling technique is commonly used in object-oriented software development? A) Data Flow Diagrams (DFD) B) Entity-Relationship Diagrams (ERD) C) Use Case Modeling D) Structured English	CO5	2
f.	Which software testing level verifies the integration of various system components? A) Unit Testing B) System Testing C) Acceptance Testing D) Regression Testing	CO3	2
g.	Which requirement type describes what the system should do and how it should behave? A) Functional requirements B) Non-functional requirements C) Design requirements D) User requirements	CO4	2
h.	Which project management activity involves allocating resources, estimating costs, and scheduling tasks? A) Feasibility Analysis B) Risk Assessment C) Project Planning D) Quality Assurance	CO1	3
i.	Which software component is responsible for managing the storage and retrieval of data? A) Application software B) Operating system C) Compiler D) Database management system	CO3	2
j.	What does ISO stand for in the context of ISO 9000 certification? A) International Software Organization B) Internal Software Operations C) International Organization for Standardization D) International Software Optimization	CO4	2

Q2. Short Answer Type (Attempt any five out of seven)**(5X4=20)**

a.	What is User Interface Design, and why is it essential?	CO1	3
b.	What is the importance of software in modern systems?	CO3	1
c.	Name some test techniques commonly used in software testing.	CO2	3
d.	Differentiate between functional and non-functional requirements.	CO5	2
e.	What is the difference between software static and dynamic analysis?	CO2	1
f.	What is the software crisis in software engineering?	CO3	2
g.	What is SA/SD Component-Based Design, and when is it used?	CO4	2

Q3. Structured Questions (Attempt any three out of four)

(3X10=30)

a.	(i) Provide examples of test techniques commonly used in software testing. (ii) What is Black-Box Testing, and when is it applied? (iii) How does White-Box Unit Testing differ from Black-Box Testing?	CO1	3,1,1
b.	(i) How has the role of software evolved over time? (ii) What are the major components of software systems? (iii) How do software applications impact various industries?	CO3	2,2,1
c.	(i) What are the key issues related to software reliability? (ii) Name some reliability metrics used in software quality assurance. (iii) How do matrices and measurements play a role in software quality assessment?	CO2	3,3,1
d.	(i) Explain the Linear Sequential Model in software development. (ii) Explain the Spiral Model in software development. (iii) Name some Evolutionary Process Models and briefly explain one of them.	CO5	2,2,2

Q4. Long Answers (Attempt any two out of three)

(2X15=30)

a.	(i) Explore the advanced integration testing methods for intricate software ecosystems. (ii) Compare the advanced capabilities of various testing tools in ensuring software quality.	CO4	2,2
b.	(i) How does the Software Development Life Cycle (SDLC) adapt to the unique requirements of innovative software projects? (ii) What are the key challenges in maintaining complex software components in large-scale systems?	CO2	1,3
c.	(i) Discuss the stages involved in the Linear Sequential Model for software development. (ii) What are some potential difficulties in implementing Agile methodologies in a large-scale project?	CO3	2,2

END SEMESTER EXAMINATION, DECEMBER - 2024

BCA SEMESTER - V/ B. Tech. CSE Semester - VII

Course Name: Disaster Management

Course Code: BCA309/GES471

Time allotted: 03 Hours

Max. Marks: 100

Note: Read all the instructions carefully.

Q.1. Attempt all.

(10×2=20)

QN	Questions	CO	PO
a.	Define hazard.	1	8
b.	Give two examples of modern hazards.	1	5
c.	Define focus of earthquake.	1	8
d.	Write two manmade causes of floods.	2	8
e.	What is mitigation?	1	8
f.	Name any two phases of disaster management cycle.	3	5
g.	Write any one objective of sustainable development.	1	5
h.	How disasters and development is interrelated? Write two points.	2	5
i.	Write full form of NDRF.	1	5
j.	What is National Building Code?	1	5

Q.2. Attempt any five out of Seven.

(5×4=20)

QN	Questions	CO	PO
a.	What are different types of hazards?	1	5
b.	Write any five causes of forest fires.	1	8
c.	Write short note on prevention of biological hazards.	1	5
d.	Draw a well labeled disaster risk reduction cycle.	3	5
e.	How communities prepare itself for upcoming disasters?	3	5
f.	Why India is vulnerable for meteorological disasters?	2	8
g.	Write a short note on Hyogo protocol.	1	5

Q.3. Attempt any three out of four.

(3×10=30)

QN	Questions	CO	PO
a.	Brief about different types of hazards.	1	5
b.	What are the manmade causes of global warming?	2	8
c.	Describe importance of appropriate communication during the disaster crisis.	4	5
d.	Brief about non-structural mitigation measures for disasters.	3	5

Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO
a.	Describe about different types of flood in detail. Also explain any case study on flash flood.	1	5
b.	Explain the role of NDRF and SDRF in disaster management.	2	5
c.	Discuss the interrelationship between development and disasters with examples.	3	8

END SEMESTER EXAMINATION, DECEMBER - 2024

BCA Semester – V

Course Name: Programming in VB.Net

Course Code: BCA302

Time allotted: 03 Hours

Max. Marks: 100

Note: Read all the instructions carefully.

Q. 1. Attempt all questions. All carry equal marks.

(2 x 10 = 20)

S.No	Questions	CO	PO
a.	The "Do While" loop in VB.NET will always execute at least once. (T/F)	1	1
b.	What is an exception?	1	1
c.	In VB.NET, a function must always return a value; it cannot be a Sub. (T/F)	1	1
d.	What is the default extension for a VB.NET source code file?	2	2
e.	Which loop is used for iterating a block of code a specific number of times in VB.NET?	2	1
f.	What does preserve keyword do in VB.NET?	3	2
g.	Which keyword is used to declare a constant in VB.NET?	3	2
h.	VB.NET is a programming language developed by _____.	2	1
i.	In VB.NET, the "Dim" keyword is used for declaring _____.	2	1
j.	The term "VB" in VB.NET stands for _____.	4	2

Q. 2. Attempt any 5 questions. All carry equal marks

(5 x 4 = 20)

S.No	Questions	CO	PO
a.	Can you explain the key components of ADO.NET architecture?	1	1
b.	Discuss the importance of solution explorer in VB.NET.	1	1
c.	Explain the .NET Framework architecture in detail.	1	1
d.	List out the importance of user interface design.	1	1
e.	Examine the utility of textbox, label, button, list box, checkbox, picture box.	3	1
f.	What is form designer, output window & object browser in VB.NET?	2	3
g.	What are interfaces in VB.NET, and how do they facilitate multiple inheritance?	3	1

Q. 3. Attempt any 3 questions. All carry equal marks.

(10 x 3 = 30)

S.No	Questions	CO	PO
a.	i. Explain Method Overloading & Overriding with example. ii. What is Exception? Explain Try-Catch block with example.	1	1
b.	i. Explain the difference between jagged arrays & controlled array in VB.NET. Write syntax. ii. Demonstrate the implementation of returning values from function. Write a function to swap two numbers.	3	3
c.	i. Discuss the concept of subroutines and functions in VB.NET console programming. ii. How do you use the Console.ReadLine() method to get user input in VB.NET?	3	2
d.	ii. What is the purpose of loops (For, While, Do-While) in VB.NET console applications? ii. How can you work with arrays in a VB.NET console application?	3	3

Q. 4. Attempt any 2 questions. All carry equal marks.

(15 x 2 = 30)

S.No	Questions	CO	PO
a.	i. How does VB.NET support multiple exception handling in object-oriented programming? ii. Explain the difference between OLEDB and SQLDB in VB.NET. iii. Explain properties, methods and events of Form control. Write example of each.	1	1
b.	i. What is Windows Forms, and how does it contribute to GUI programming in VB.NET? ii. Discuss methods of string class. Write a program to compare strings S1=SRHU S2=SSRRHHUU. iii. Discuss the role of select case and write a code example of its usage.	2	2
c.	i. How does VB.NET handle method overloading? Write an example to show. ii. Write a program to show usage of preserve keyword VB.NET? iii. Discuss the usage of conditional statements (such as If-Then-Else) in VB.NET console programming. Write syntax for multiline If-Else statements.	3	3

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END SEMESTER EXAMINATION, DECEMBER - 2024

BCA Semester – V

Course Name: Optimization Techniques

Course Code: BCA304

Time allotted: 03 Hours

Max. Marks: 100

Note: Read all the instructions carefully. Attempt all Sections & Questions.

Q.1. Attempt all.

(10×2=20)

QN	Questions	CO	PO
a.	Convert the given LPP into the standard form of Simplex Method: $Min Z = 5x + y$ $s.t \ x + y \leq 100; 3x + 5y \leq 90; x, y \geq 0$	1	1
b.	Name the methods which are used to solve transportation problem.	2	1
c.	Determine objective function, constraints and non-negative variable in the given LPP: $Min z = 250x + 5y$ $s.t \ 5x - y \leq 200; x + y \leq 60; x, y \geq 0$	1	1
d.	Define the term feasible reason.	1	1
e.	a.1 In transportation problem where the demand is equal to supply it is known as ____. a.2 Which method is used to solve assignment problem?	2	1
f.	What is saddle point?	3	1
g.	What is the formula for obtaining EOQ with shortage and without shortage?	5	1
h.	Convert the given LPP into the standard form of Big-M Method: $Max Z = 200x + 250y$ $s.t \ x + 2y \geq 10; 3x + 4y \leq 24; x, y \geq 0$	1	1
i.	What do you understand by Optimal feasible solution?	1	1
j.	What is FCFS and LCFS stands for in queuing models?	1	1

Q.2. Attempt any five out of Seven.

(5×4=20)

QN	Questions	CO	PO																														
a.	Solve the transportation problem using Least Cost Method: <table><tr><td></td><td>D₁</td><td>D₂</td><td>D₃</td><td>D₄</td><td>Supply</td></tr><tr><td>S₁</td><td>21</td><td>16</td><td>15</td><td>3</td><td>11</td></tr><tr><td>S₂</td><td>17</td><td>18</td><td>14</td><td>23</td><td>13</td></tr><tr><td>S₃</td><td>32</td><td>27</td><td>18</td><td>41</td><td>19</td></tr><tr><td>Demand</td><td>6</td><td>6</td><td>8</td><td>23</td><td></td></tr></table>		D ₁	D ₂	D ₃	D ₄	Supply	S ₁	21	16	15	3	11	S ₂	17	18	14	23	13	S ₃	32	27	18	41	19	Demand	6	6	8	23		1	2
	D ₁	D ₂	D ₃	D ₄	Supply																												
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b.	Solve the game graphically. <table><tr><td>Player</td><td>B₁</td><td>B₂</td></tr><tr><td>A</td><td></td><td></td></tr><tr><td>A₁</td><td>1</td><td>-3</td></tr><tr><td>A₂</td><td>3</td><td>5</td></tr><tr><td>A₃</td><td>-1</td><td>6</td></tr><tr><td>A₄</td><td>4</td><td>1</td></tr><tr><td>A₅</td><td>2</td><td>2</td></tr><tr><td>A₆</td><td>-5</td><td>0</td></tr></table>	Player	B ₁	B ₂	A			A ₁	1	-3	A ₂	3	5	A ₃	-1	6	A ₄	4	1	A ₅	2	2	A ₆	-5	0	3	2						
Player	B ₁	B ₂																															
A																																	
A ₁	1	-3																															
A ₂	3	5																															
A ₃	-1	6																															
A ₄	4	1																															
A ₅	2	2																															
A ₆	-5	0																															
c.	Solve the problem graphically. $\begin{aligned} \text{Min } z &= 3x + 2y \\ \text{s.t.} \\ x + y &\geq 8; \quad 3x + 5y \leq 15; \quad x, y \geq 0 \end{aligned}$	1	3																														

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d.	Solve the transportation problem using North West Corner Method:	2	d.																																				
	<table> <tr> <th></th><th>D₁</th><th>D₂</th><th>D₃</th><th>D₄</th><th>Supply</th></tr> <tr> <th>S₁</th><td>19</td><td>30</td><td>50</td><td>10</td><td>7</td></tr> <tr> <th>S₂</th><td>70</td><td>30</td><td>40</td><td>60</td><td>9</td></tr> <tr> <th>S₃</th><td>40</td><td>8</td><td>70</td><td>20</td><td>18</td></tr> <tr> <th>Demand</th><td>5</td><td>8</td><td>7</td><td>14</td><td></td></tr> </table>		D ₁	D ₂	D ₃	D ₄	Supply	S ₁	19	30	50	10	7	S ₂	70	30	40	60	9	S ₃	40	8	70	20	18	Demand	5	8	7	14									
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e.	Solve the game whose pay off matrix is given is :	3	2																																				
	B <table> <tr> <th></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr> <tr> <th>1</th><td>1</td><td>3</td><td>2</td><td>7</td><td>4</td></tr> <tr> <th>2</th><td>3</td><td>4</td><td>1</td><td>5</td><td>6</td></tr> <tr> <th>3</th><td>6</td><td>5</td><td>7</td><td>6</td><td>5</td></tr> <tr> <th>4</th><td>2</td><td>0</td><td>6</td><td>3</td><td>1</td></tr> </table> A		1	2	3	4	5	1	1	3	2	7	4	2	3	4	1	5	6	3	6	5	7	6	5	4	2	0	6	3	1								
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f.	Solve the assignment problem	2	3																																				
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O.3. Attempt any three out of four

Q.3. Attempt any three out of four.

(3×10=30)

Only any three out of four.
 (3×10=30)

QN	Questions	CO	PO																														
a.	Solve the Linear Programming Problem using Simplex Method: $\text{Max } z = 250x + 75y$ s.t $5x + y \leq 100; x + y \leq 60; x, y \geq 0$	1	3																														
b.	Solve the transportation problem using Vogel's Approximation Method: <table border="1" style="margin: 10px auto;"> <thead> <tr> <th></th> <th>D₁</th> <th>D₂</th> <th>D₃</th> <th>D₄</th> <th>Suppl y</th> </tr> </thead> <tbody> <tr> <td>S₁</td> <td>19</td> <td>30</td> <td>50</td> <td>10</td> <td>7</td> </tr> <tr> <td>S₂</td> <td>70</td> <td>30</td> <td>40</td> <td>60</td> <td>9</td> </tr> <tr> <td>S₃</td> <td>40</td> <td>8</td> <td>70</td> <td>20</td> <td>18</td> </tr> <tr> <td>Demand</td> <td>5</td> <td>8</td> <td>7</td> <td>14</td> <td></td> </tr> </tbody> </table>		D ₁	D ₂	D ₃	D ₄	Suppl y	S ₁	19	30	50	10	7	S ₂	70	30	40	60	9	S ₃	40	8	70	20	18	Demand	5	8	7	14		2	3
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c.	At a public telephone booth in a post office arrivals are considered to be Poisson with an average inter-arrival time of 12minutes. The length of phone call may be assumed to be distributed exponentially with an average of 4 minutes. Calculate - Average no. of customers in the system - Average no. of customers in the queue or average queue length. - Average time a customer spend in the system - Average time a customer waits before being served.	4	2																														

d.	Solve the following game whose payoff matrix is:							3	3	
	A	B								
			I	II	III	IV	V			VI
		I	4	2	0	2	1			1
		II	4	3	1	3	2			2
		III	4	3	7	-5	1			2
		IV	4	3	4	-1	2			2
V	4	3	3	-2	2	2				

Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO																																											
a.	Solve the LPP using Big-M Method $\text{Max } z = x + y$ subject to constraints $x + y \geq 2; x + 2y \leq 8; x, y \geq 0$	1	3																																											
b.	b.1 A particular item has a demand of 9,000 units per year. The cost of one procurement is Rs100/- and the holding cost per unit is Rs 2.40 per year. The replacement is instantaneous and no shortages are allowed. Determine i) Economic lot size iii) Optimal cost ii) The no of orders per year iv) The time between the orders b.2 The demand of an item is 18,000 units annually. The holding cost is Rs 1.20 per unit time and the cost of shortage is Rs 5.00. The production cost is Rs. 400/-. Assume that the replenishment rate is instantaneous determine: i) Economic Lot size iii) No. of orders per year ii) Time between the orders	5	3																																											
c.	Five men are available to do five different jobs. From past records, the time (in hours) that each man takes to do each job is known and is given in the following table: <table><tr><td colspan="2" rowspan="2"></td><td colspan="5">Jobs</td></tr><tr><td>I</td><td>II</td><td>III</td><td>IV</td><td>V</td></tr><tr><td rowspan="5">Men</td><td>A</td><td>2</td><td>9</td><td>2</td><td>7</td><td>1</td></tr><tr><td>B</td><td>6</td><td>8</td><td>7</td><td>6</td><td>1</td></tr><tr><td>C</td><td>4</td><td>6</td><td>5</td><td>3</td><td>1</td></tr><tr><td>D</td><td>4</td><td>2</td><td>7</td><td>3</td><td>1</td></tr><tr><td>E</td><td>5</td><td>3</td><td>9</td><td>5</td><td>1</td></tr></table> Find out how men should be assigned the jobs in way that will minimize the total time taken.			Jobs					I	II	III	IV	V	Men	A	2	9	2	7	1	B	6	8	7	6	1	C	4	6	5	3	1	D	4	2	7	3	1	E	5	3	9	5	1	2	3
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D	D																		
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END SEMESTER EXAMINATION, DECEMBER - 2024**Course Name: Web Technology****BCA Semester – V****Course Code: BCA305****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Objective type****(Very Short/ Short Answer, MCQ, One-liners, Fill in the Blanks, True/False) Attempt all. (10 x 2)**

a.	What is the purpose of the tag in HTML?	CO2	PO1,PO2,PO3,PO5
b.	How do you add a CSS stylesheet to an HTML document?	CO2	PO1,PO2,PO3,PO4,PO5
c.	What's the difference between CSS classes and IDs?	CO4	PO1,PO2,PO3
d.	What is the box model in CSS?	CO2	PO1,PO2,PO3,PO4,PO5
e.	What is the CSS selector specificity?	CO4	PO1,PO2,PO3
f.	How can you include external fonts in your web page using CSS?	CO4	PO1,PO2,PO3
g.	What is the purpose of the z-index property in CSS?	CO4	PO1,PO2,PO3
h.	How do you center an element horizontally in CSS?	CO4	PO1,PO2,PO3
i.	What's the difference between CSS flexbox and CSS grid?	CO2	PO1,PO2,PO3,PO4,PO5
j.	What is the purpose of the CSS float property?	CO1	PO1,PO3,PO4

Q.2. Short notes/ Short Answer Type (Attempt any five out of seven)**(5 x 4)**

a.	What is the role of a domain name system (DNS) in web technologies?	CO2	PO1,PO2,PO3,PO5
b.	Explain what is a web page's "viewport"?	CO1	PO1,PO3,PO4
c.	What is the purpose of cookies in web development?	CO2	PO1,PO2,PO4,PO5
d.	How to secure data transaction? What does SSL/TLS stand for in web security?	CO3	PO1,PO3
e.	What is a Content Management System (CMS)?	CO2	PO1,PO2,PO5
f.	Explain the difference between HTTP and HTTPS?	CO4	PO1,PO2,PO3
g.	Define AJAX in web development.	CO4	PO1,PO2

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Q.3. Structured Question (Attempt any three out of four)

(3 x 10)

a.	(i) What distinguishes stateful and stateless web services, and in what situations are each used? (ii) How do web services support real-time features and push notifications for instant updates? (iii) Can you explain the role of caching in optimizing web service performance and reducing server load?	CO4	PO1,PO2
b.	(i) Discuss the challenges and best practices for version control and collaboration in web service development projects. (ii) How does security differ between public and private APIs in web services, and what are the common security mechanisms used? (iii) Explain the significance of web service discovery and service registries in distributed and microservices architectures.	CO4	PO1,PO2
c.	(i) What principles govern RESTful hypermedia APIs, and how do they enable dynamic navigation in web services? (ii) How does web services handle data validation and input sanitization to prevent common security vulnerabilities? (iii) What is Web 3.0, and how does it represent the next phase in the evolution of the internet?	CO4	PO1,PO3
d.	(i) Can you delve into the key technologies and concepts that underpin Web 3.0, including blockchain and decentralized networks? (ii) How does Web 3.0 differ from Web 2.0, and what fundamental changes in architecture and user experiences does it introduce? (iii) Discuss the pivotal role of blockchain technology in Web 3.0 and its impact on data security and trust.	CO4	PO1,PO2

Q.4. Long Answer/ Essay type (attempt any two out of three)

(2 x 15)

a.	(i) How do decentralized applications (dApps) operate within Web 3.0, and what are the advantages and challenges associated with them? (ii) Can you provide an in-depth exploration of decentralized identity and self-sovereign identity systems within the context of Web 3.0? (iii) Elaborate on the role of smart contracts in Web 3.0 and how they automate and secure transactions within decentralized systems.	CO4	PO1,PO3
b.	(i) How does Web 3.0 address data privacy and user ownership, and what technologies are harnessed to achieve these objectives? (ii) Explain the foundational principles of tokenization within Web 3.0 and the utilization of non-fungible tokens (NFTs) for digital assets. (iii) What key considerations should be taken into account when implementing blockchain-based voting and governance mechanisms in Web 3.0?	CO4	PO1,PO2,
c.	(i) How is cross-chain interoperability achieved within Web 3.0, and what are the implications for the interconnection of blockchain networks? (ii) Can you shed light on the role of decentralized storage solutions, such as IPFS, within Web 3.0, particularly for content distribution and retrieval? (iii) Describe the significance of decentralized finance (DeFi) within the Web 3.0 landscape and its impact on traditional financial systems.	CO4, CO5	PO1,PO2, PO3,PO5

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END SEMESTER EXAMINATION, DECEMBER - 2024
BCA Semester – V

Course Name: Management Information Systems**Course Code: BCA303****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Attempt all.****(10×2=20)**

QN	Questions	CO	PO
a.	Differentiate Internet from Intranet.	3	1,8
b.	Explain Expert System	2	1,8
c.	What do you understand by inference engine?	2	1
d.	Compare WiFi and Bluetooth w.r.t range of communication.	3	1,8
e.	List some features you look in office automation system.	2	1
f.	Define SCM	5	1
g.	What is the difference between data and information?	1	1,2
h.	What do you understand by transparency?	1	1
i.	What advantages you get by replicating data?	5	1
j.	Write two merits of ERP?	5	1

Q.2. Attempt any five out of Seven.**(5×4=20)**

QN	Questions	CO	PO
a.	Explain the role of Data Warehouse and Data mining in information support to strategic business analysis and management.	3	1,8
b.	Explain client server architecture and service oriented architecture.	3	1,4,8
c.	What are the different applications of networks in information management?	4	1,4,8
d.	How MIS is beneficial to an organization?	3	1,8
e.	What are accounting information systems? Describe the parts of an accounting information system.	5	1,4,8
f.	What is supply chain management (SCM)? Explain different key features of SCM.	5	1
g.	What is organizational planning? Describe eight main steps involved in planning process.	4	1

P.T.O./-

Q.3. Attempt any three out of four.

(3×10=30)

QN	Questions	CO	PO
a.	(i) Explain the concept of distributed database? (ii) Explain the characteristics and components of Expert system.	3	1
b.	(i) What is Wi-Max technology? Write applications and benefits of Wi-Max. (ii) Briefly, explain Bluetooth and Wi-Fi technology.	3	1,8
c.	(i) Explain different types of Information retrieval model. (ii) Explain different stages of TPC.	1 2	1 1
d.	(i) What is ERP? What advantages an organization get by implementing an ERP? (ii) Discuss the concepts of Control	5 4	1,8 1,8

Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO
a.	(i) Explain the methods of data and information collection. (ii) Describe Office automation systems by listing essential features it must contain.	1 2	1,8 1,8
b.	(i) Explain concepts of Advance database (ii) Differentiate among PAN, LAN, MAN, and WAN.	3 3	8 1,8
c.	(i) Explain the role and purpose of supply chain management. (ii) What key functions you look in Information system deployed in a hospital?	5 5	1,4, 8 1,2
