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MCA(INTEGRATED)
(SEM. VII) THEORY EXAMINATION 2021-22
MULTIMEDIA & ANIMATION

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

a.	State various image file formats.
b.	Describe the need of software in multimedia.
c.	What are contents? How are they acquired?
d.	What is the function of anti-aliasing technique?
e.	What do you mean by Compression?
f.	What are the types of animation?
g.	Write down names of Animation Techniques.

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

a.	What is multimedia? Explain the importance of multimedia in detail.
b.	What is Hypermedia? What are the elements of hypertext? How hypertext is different from hypermedia?
c.	What are Design fundamentals of multimedia systems?
d.	Explain the RGB color mode, how it is different from CMYK color model.
e.	Write a detail note on Animation File Formats.

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

(a)	What is element of multimedia and explain the different Elements of multimedia.
(b)	Compare Vector scan display and Raster scan display in detail.

4. Attempt any one part of the following:**7 x 1 = 7**

(a)	Write a note on Sketching and Illustration.
(b)	Explain the roles of members of multimedia production team.

5. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain various software tools used in multimedia system development.
(b)	Explain various features of Authorizing tools.

6. Attempt any one part of the following:**7 x 1 = 7**

(a)	Write a short note on designing and producing multimedia projects.
(b)	Why are standards important for developing multimedia content? What are MPEG standards?

7. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain different tools used for animation.
(b)	Write a note on making animation for a rolling ball.



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MCA (INTEGRATED)
(SEM VII) THEORY EXAMINATION 2021-22
DOT NET FRAMEWORK & C#

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

a.	What are the major characteristics of C# language?
b.	What is the difference between CLS and CTS?
c.	What is thread pool?
d.	What do you mean by Properties in C#
e.	Discuss about .Net class library?
f.	Differentiate between “managed” code” and “unmanaged code”.
g.	What is shared assembly?

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

a.	Explain the role of Socket Programming to implement a Secure Messaging Service in .NET.
b.	Discuss the various stages of a Web Form Life Cycle using suitable example.
c.	Explain the working of following controls : i. Checkbox ii. Label iii. Textbox iv. ComboBox
d.	What are the main features of .NET platform? Discuss them briefly.
e.	What is a Delegate? What are the multicast delegates? Explain with example.

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

(a)	Discuss commonly used exceptions. Explain deriving exception classes with the help of an example.
(b)	What is Thread? How can we create and start a thread in C#? Explain the main properties of thread in C#.

4. Attempt any one part of the following:**7 x 1 = 7**

(a)	Describe in detail the role of Common Language Runtime (CLR) in .NET.
(b)	Explain the process to create a strong name for a .NET assembly. Where is it situated on the system? What is the smallest unit of execution in .NET?

5. Attempt any one part of the following:**7 x 1 = 7**

(a)	Discuss about MDI form and what its properties explain with example.
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(b)	What is an Event Handling? Write a program to handle the Mouse Click Event using C#.
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6. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Describe the namespace which are used for network programming in C#. Explain with suitable example.
(b)	What are windows forms? Write steps for the following : (i) Creating Windows Application (ii) Adding windows forms to the project (iii) Resizing Windows

7. Attempt any *one* part of the following:

7 x 1 = 7

(a)	What do you mean by Generic? How can you create your own generic types, including classes, interface, methods and delegates?
(b)	Explain the Web method in web services and discuss the various ways of implementing web services.

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MCA (INTEGRATED)
(SEM. VII) THEORY EXAMINATION 2021-22
COMPUTER BASED OPTIMIZATION TECHNIQUES

Time: 3 Hours

Total Marks: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

a.	What is linear programming problem?
b.	What is the degeneracy in Linear Programming Problem?
c.	What do you mean by Duality?
d.	What do you mean by Degeneracy in Transportation problem?
e.	What are the assumptions of EOQ model?
f.	Explain the relationship between State, Stage and Policy in DPP.
g.	Explain Bellman's Principle of Optimality.

SECTION B

2. Attempt any three of the following:

7 x 3 = 21

a.	Discuss the ways to identify the following situations while solving L.P.P. – i) Infeasible Problem ii) Degenerate Problem iii) Unbounded Problem																																						
b.	Solve the following LPP: Max. $Z = 10X_1 + 4X_2$ s.to. $X_1 + X_2 \leq 2$ $2X_1 + 5X_2 \leq 10$ $-2X_1 - 8X_2 \geq -12$ where as $X_1, X_2 \geq 0$																																						
c.	Determine an initial basic feasible solution to the following transportation problem by using Vogel's method : <table><tr><td colspan="2"></td><th colspan="4">Destination</th></tr><tr><td colspan="2"></td><th>A</th><th>B</th><th>C</th><th>D</th><th>Supply</th></tr><tr><th rowspan="4">Origin</th><th>I</th><td>6</td><td>4</td><td>1</td><td>5</td><td>14</td></tr><tr><th>II</th><td>8</td><td>9</td><td>2</td><td>7</td><td>16</td></tr><tr><th>III</th><td>4</td><td>3</td><td>6</td><td>2</td><td>5</td></tr><tr><th>Demand</th><td>6</td><td>10</td><td>15</td><td>4</td><td>35</td></tr></table>			Destination						A	B	C	D	Supply	Origin	I	6	4	1	5	14	II	8	9	2	7	16	III	4	3	6	2	5	Demand	6	10	15	4	35
		Destination																																					
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	III	4	3	6	2	5																																	
	Demand	6	10	15	4	35																																	
d.	Explain the controlled & uncontrolled variables. Also explain Probabilistic model.																																						
e.	Use Dynamic Programming to solve following LPP: Max. $Z = 2X_1 + 5X_2$ s.to. $2X_1 + X_2 \leq 430$ $2X_2 \leq 460$ where as $X_1, X_2 \geq 0$																																						

SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

(a)	Solve the following LPP by graphically : Max. $Z = 300X_1 + 400X_2$ s.to. $5X_1 + 4X_2 \leq 200$ $3X_1 + 5X_2 \leq 150$ $5X_1 + 4X_2 \geq 100$ $8X_1 + 4X_2 \geq 80$ where $X_1, X_2 \geq 0$
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(b)	<p>Compare primal and dual while solving LPP. Also find the dualilty of the following problem</p> $\text{Max. } Z = 30X_1 + 20X_2$ $\text{s.to. } -X_1 - X_2 \geq -8$ $6X_1 - 4X_2 \leq -12$ $5X_1 + 8X_2 = 20$ <p>where $X_1, X_2 \geq 0$</p>
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4. **Attempt any one part of the following:** 7 x 1 = 7

(a)	Solve the assignment problem for optimal solution using Hungarian method																													
	<table><tr><td rowspan="2">Worker</td><td colspan="4">Job</td></tr><tr><td>A</td><td>B</td><td>C</td><td>D</td></tr><tr><td>1</td><td>45</td><td>40</td><td>51</td><td>67</td></tr><tr><td>2</td><td>57</td><td>42</td><td>63</td><td>55</td></tr><tr><td>3</td><td>49</td><td>52</td><td>48</td><td>64</td></tr><tr><td>4</td><td>51</td><td>45</td><td>60</td><td>55</td></tr></table>	Worker	Job				A	B	C	D	1	45	40	51	67	2	57	42	63	55	3	49	52	48	64	4	51	45	60	55
Worker	Job																													
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1	45	40	51	67																										
2	57	42	63	55																										
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(b)	Explain various steps in MODI method for finding optimal solution of the transportation problem.																													

5. **Attempt any one part of the following:** 7 x 1 = 7

(a)	<p>Explain basic characteristics of integer programming problem and also explain the Gomory's Cutting Plane Method for solving Integer Programming Problems.</p>
(b)	<p>Machine A costs Rs. 45000 and the operating costs are estimated at Rs. 1000 for the first year increasing by Rs. 10000 per year in the IInd and subsequent year. Machine B costs Rs. 50000 and operating costs Rs. 2000 for the first year, increasing by Rs. 4000 per year. If we now have a machine of type A, should we replace it with B ? If so when ? Assume that both machines have no resale value and future costs are not discounted.</p>

6. **Attempt any one part of the following:** 7 x 1 = 7

(a)	<p>A company has found that its cost to purchase a component is Rs. 50 per order and the carrying cost is 10% on the average inventory. The company currently purchases Rs. 20000 worth of components in year. Assuming that same demand will be there in the next year, suggest a suitable policy of purchase in terms of no. of orders in a year and quantity to be ordered for each year. Assuming fractional order can be made.</p>
(b)	<p>What do you mean by Inventory? Explain the various cost and factors associated with the Inventories.</p>

7. **Attempt any one part of the following:** 7 x 1 = 7

(a)	<p>A company has six salesman and three market areas (A,B and C). It is asked to determine the number of salesman to allocate to each other area, to maximize profit. The following table gives the profit from each market area as a function of the number of salesman allocated. Use dynamic programming to determine the optimal solution.</p> <table><tr><th colspan="2">No. of Salesman</th></tr><tr><th></th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr><tr><th>Area A</th><td>38</td><td>41</td><td>48</td><td>58</td><td>66</td><td>72</td><td>83</td></tr><tr><th>Area B</th><td>40</td><td>42</td><td>50</td><td>60</td><td>66</td><td>75</td><td>82</td></tr><tr><th>Area C</th><td>60</td><td>64</td><td>68</td><td>78</td><td>90</td><td>102</td><td>109</td></tr></table>	No. of Salesman			0	1	2	3	4	5	6	Area A	38	41	48	58	66	72	83	Area B	40	42	50	60	66	75	82	Area C	60	64	68	78	90	102	109
No. of Salesman																																			
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Area B	40	42	50	60	66	75	82																												
Area C	60	64	68	78	90	102	109																												
(b)	<p>Explain Characteristics and Application of Dynamic Programming in detail.</p>																																		



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MCA (INTEGRATED)
(SEM VII) THEORY EXAMINATION 2021-22
SOFTWARE PROJECT MANAGEMENT

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

a.	What do you meant by Software and Project?
b.	Draw a neat diagram of SPM framework?
c.	How we can improve the quality of software?
d.	Give the various phases of Product Management Lifecycle?
e.	Define Management Spectrum?
f.	What do you meant by Risk Analysis and Risk Planning?
g.	Define testing? Why testing is needed while developing software?

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

a.	What do you mean by planning? Explain the objective of software project planning?
b.	Explain the various scheduling terminologies and technique of SPM?
c.	Discuss the various types of Software Review in SPM?
d.	Give the difference between verification and validation? Discuss SEI-CMM model with suitable diagram?
e.	What do you meant by Risk Management? Explain Risk Breakdown Structure with suitable?

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

(a)	Explain the various types of project plan in SPM?
(b)	Discuss the Software Project Lifecycle with suitable diagram?

4. Attempt any one part of the following:**7 x 1 = 7**

(a)	Write shorts notes on (any two) : i. Project Elements ii. Gantt Chart iii. CPM iv. PERT
(b)	Discuss the concept of Work Breakdown Structure? Explain the various type of WBS with example?



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5. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Write shorts notes on (any two) : i. BCWS ii. CPI iii. SPI iv. CV
(b)	Explain the concept of Pair Programming with suitable example?

6. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Discuss testing objectives and principles in SPM?
(b)	Define SQA? Explain the various level of testing?

7. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Describe SCM and its objective?
(b)	Explain Risk Management Process with suitable diagram?

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MCA (Integrated)
(SEM-VII) THEORY EXAMINATION 2021-22
ENTERPRISE RESOURCE PLANNING

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

a.	What is ERP?
b.	What do you understand by OLAP ?
c.	What do you understand by Gap Analysis?
d.	What is Analytical Hierarchy Processes (AHP)?
e.	What do you understand by ROI of ERP implementation?
f.	List the different phases of Business Process Re-engineering(BPR).
g.	What is supply chain management?

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

a.	Discuss the reasons for the growth of ERP market.
b.	Discuss the direct and indirect benefits of ERP System.
c.	List Various ERP implementation approach. Discuss any two approaches in detail.
d.	What are the factors that should consider to implement an ERP System successfully?
e.	Briefly discuss the role of consultants and vendors in ERP implementation?

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

(a)	Define Data Warehouse. Differentiate between OLAP and OLTP.
(b)	Discuss the various phases involved in Knowledge Discovery in Database (KDD).

4. Attempt any one part of the following:**7 x 1 = 7**

(a)	Discuss the role of following phases required in ERP Life Cycle: 1) Adoption Decision 2) Evolution & Retirement Phase
(b)	Suggest and explain the working of various ERP modules required for Software Company.

5. Attempt any one part of the following:**7 x 1 = 7**

(a)	Discuss the framework for evaluating ERP acquisition?
(b)	What do you understand by ERP Customization? How it is beneficial for an organization.

6. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain ERP success inhibitors and success accelerators.
(b)	Is Management concern is important for ERP Success. Give your views.

7. Attempt any one part of the following:**7 x 1 = 7**

(a)	Why extended ERP required in current scenario? Explain it.
(b)	Discuss the role of E-Commerce in success of ERP System.