

(2 Hours )

(Total Marks:60)

**N.B:**

1. All questions are compulsory.
2. Figures to the right indicate marks.
3. Illustration, in-depth answers, and diagrams will be appreciated.
4. Mixing of sub-questions is not allowed.

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|---|---|-----------|
| 1 | <b>Attempt any Two</b>  | <b>12</b> |
|   | <ul style="list-style-type: none"><li>a Explain the features of conceptual Modeling and what the requirements for an effective conceptual modeling are.</li><li>b Explain simulation as a perspective of management.</li><li>c Explain simulation in details and discuss the advantages and disadvantages.</li><li>d Why a modular does needs to simplify a model discuss the methods used by the modular for model specification.</li></ul>                                |           |
| 2 | <b>Attempt any Two</b>  | <b>12</b> |
|   | <ul style="list-style-type: none"><li>a Define an explain the three method of white box validation and verification</li><li>b Explain the approaches used to perform black box validation and compare the Black Box validation with white validation.</li><li>c Explain the difficulties of validation and verification in simulation.</li><li>d How is simulation project success achieved in detail.</li></ul>  |           |
| 3 | <b>Attempt any Two</b>  | <b>12</b> |
|   | <ul style="list-style-type: none"><li>a Differentiate between the analytical and simulation modeling.</li><li>b Explain the types of standard and custom networks used in and logic draw neat diagram of each.</li><li>c Explain the movement in continuous 2D space.</li><li>d Explain virtual time execution mode with respect to any logic.</li></ul>  |           |
| 4 | <b>Attempt any Two</b>  | <b>12</b> |
|   | <ul style="list-style-type: none"><li>a Explain the Designing state-based behavior consisting of State charts and State transitions?</li><li>b Describe in detail the Designing state-based behavior consisting of State charts and State transitions?</li><li>c Explain the Designing interactive models: using controls, Dynamic properties of controls?</li><li>d Explain Randomness in Models: Probability distributions, sources of randomness in the model?</li></ul> |           |
| 5 | <b>Attempt any Two</b>  | <b>12</b> |
|   | <ul style="list-style-type: none"><li>a Explain the framework of Conceptual modeling?</li><li>b Describe Virtual and real time Model time, Date and calendar?</li><li>c Explain Discrete Event Modeling?</li><li>d Write a short note on data collection and Analysis?</li></ul>  |           |

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