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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Information Science and Engineering

Semester End Examination; Dec - 2017/Jan - 2018

Software Engineering

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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|------|---|----|
| 1 a. | What is Software Engineering? How is it different from System Engineering? | 5 |
| b. | What are nonfunctional requirements? Briefly explain. | 5 |
| c. | Explain the waterfall model with a block diagram. List its merits and demerits. | 10 |
| 2 a. | With suitable examples, explain context models and data models. | 10 |
| b. | What is CASE? Give a brief classification of CASE tools. | 10 |

UNIT - II

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|------|--|----|
| 3 a. | What is modular decomposition? Briefly explain its variants. | 8 |
| b. | List and explain the stages in Object Oriented Design Process. | 8 |
| c. | What are the good principles of UI design? | 4 |
| 4 a. | What are the various control structures commonly used in architectural design? Explain. | 10 |
| b. | Write a note on Interface Evolution. | 5 |
| c. | How user interactions and information presentations play a vital role in software design? Explain. | 5 |

UNIT - III

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|------|---|---|
| 5 a. | What is a critical system? With an example to each, explain the three types of critical systems. | 5 |
| b. | Explain various reliability terminologies. | 5 |
| c. | Write a detailed note on Automated Static Analysis. | 5 |
| d. | Explain the concept, need and advantages of clean room software development. | 5 |
| 6 a. | Distinguish between safety and security. What are the various approaches to make a system safe and secured? | 6 |
| b. | How software inspections are conducted? Explain with roles and checks made in inspections. | 8 |
| c. | Write a detailed note on test work benches. | 6 |

UNIT - IV

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| 7 a. | Explain the decision factors governing staff selection. | 10 |
| b. | Explain Maslow's hierarchy of needs. | 5 |
| c. | Write a brief note on CPM. | 5 |

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| 8 a. Explain algorithmic cost modeling. | 10 |
| b. How quality is assured in software industries. | 5 |
| c. Write a note on quality planning. | 5 |

UNIT - V

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| 9 a. What is a legacy system? Explain the legacy system structure. | 6 |
| b. Explain software evolution dynamics. | 4 |
| c. With four clusters and strategic options, Explain legacy system evolution. | 10 |
| 10 a. Bring out the concept of maintenance and three types of maintenance. | 5 |
| b. Define reengineering. Write its importance. | 5 |
| c. With a block diagram, explain reverse engineering process. | 10 |

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