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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

Direct 2nd Year MCA- I Year II Semester (R14) Supplementary End Semester
Examinations-January-2016

(Regulations: R14)

SOFTWARE ENGINEERING

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either I or II only. Q.no 6 which is a case study is compulsory.

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|-----------|--|-----|
| 1.(I) | a) What is Software Myth? Write about various types of myths and their true aspects. | 6M |
| | b) Discuss about Generic Process Framework Activities. | 6M |
| OR | | |
| 1.(II) | a) What is meant by Prototyping? Discuss in detail the Prototyping Model. | 6M |
| | b) Write about aspect oriented software development. | 6M |
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| 2.(I) | a) Explain in detail on requirements elicitation and analysis process. | 6M |
| | b) Describe Flow-Oriented Modeling with an example. | 6M |
| OR | | |
| 2.(II) | a) Explain about various Design Engineering Concepts. | 6M |
| | b) Write about function based component design. | 6M |
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| 3.(I) | Explain the User Interface Analysis and design steps. | 12M |
| OR | | |
| 3.(II) | Discuss about pattern based software design. | 12M |
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| 4.(I) | a) Explain the strategic approach to software testing. | 6M |
| | b) Describe the Bottom Up Integration Testing. | 6M |
| OR | | |
| 4.(II) | Explain the control structure testing in White Box Testing Techniques | 12M |
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| 5.(I) | Explain in detail the risk mitigation, monitoring and management. | 12M |
| OR | | |
| 5.(II) | What do you mean by Reengineering? Write about Software Reengineering Activities. | 12M |

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OPERATING SYSTEMS

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

In Q.no 1 to 5 answer either I or II only.

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|-----------|--|-----|
| 1.(I) | a. Distinguish between Symmetric multiprocessing and Asymmetric multiprocessing. | 6M |
| | b. Give a brief note on Real time systems. | 6M |
| OR | | |
| 1.(II) | a. Define system program. Give the classification of system programs. | 6M |
| | b. Write notes on virtual machines. | 6M |
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| 2.(I) | Describe any three CPU scheduling algorithms with an example. | 12M |
| OR | | |
| 2.(II) | a. List and explain the four necessary conditions for deadlock. | 6M |
| | b. Explain the deadlock recovery mechanisms. | 6M |
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| 3.(I) | a. Draw and explain segmentation hardware. | 6M |
| | b. With a neat diagram explain the inverted page table architecture. | 6M |
| OR | | |
| 3.(II) | a. What is trashing? Discuss the two methods for controlling trashing. | 8M |
| | b. Describe the two frame allocation schemes with examples. | 4M |
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| 4.(I) | Give a detailed note on the various directory structures. | 12M |
| OR | | |
| 4.(II) | a. With an example explain SCAN disk scheduling algorithm. | 6M |
| | b. Discuss how swap space is used, where swap space is located on disk, and how swap space is managed. | 6M |
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| 5.(I) | Define protection. What are the goals of protection? Explain the principles of protection. Also describe the domain of protection. | 12M |
| OR | | |
| 5.(II) | Write short notes on the following | 12M |
| | a) One-Time passwords | |
| | b) Asymmetric encryption | |
| | c) Buffer-overflow – explanation | |

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COMPUTER ORGANIZATION

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

In Q.no 1 to 5 answer either I or II only.

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|-----------|---|-----|
| Q.1.(I) | a) Discuss various arithmetic and logical operations in detail. | 6M |
| | b) Explain the function of 3-to-8 decoder. | 6M |
| OR | | |
| Q.1.(II) | a) Represent the decimal number 8620 in excess 3-code, 8421 code and binary number. | 6M |
| | b) With the help of neat sketch explain 4 to 1 multiplexer. | 6M |
| <hr/> | | |
| Q.2.(I) | Design a bus system for four registers, and also give the block diagram for the same. | 12M |
| OR | | |
| Q.2.(II) | a) Explain the operation of restoring division with flow chart. | 6M |
| | b) Design and discuss four bit bidirectional shift register. | 6M |
| <hr/> | | |
| Q.3.(I) | a) Write a sub routine for basic computer to subtract two numbers. Explain. | 6M |
| | b) Explain about hand shaking. | 6M |
| OR | | |
| Q.3.(II) | Discuss various addressing modes in detail. | 12M |
| <hr/> | | |
| Q.4.(I) | What is virtual memory? Explain the mapping procedure for converting virtual address to physical address with necessary tables. | 12M |
| OR | | |
| Q.4.(II) | Explain page replacement policies with example. | 12M |
| <hr/> | | |
| Q.5.(I) | Discuss in detail about DMA controller and its functionality. | 12M |
| OR | | |
| Q.5.(II) | What is an interrupt? Explain the steps to be carried out while serving an interrupt. | 12M |

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