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F.E. Semester-I (Revised Course 2016-17)
EXAMINATION JANUARY 2021
Fundamentals of Computer Engineering

[Duration : Two Hours]

[Total Marks :60]

Instructions:-

1. Answer THREE FULL QUESTIONS with ONE QUESTION FROM EACH PART.
2. Assume suitable data if required.

PART - A

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|----|---|---|
| 1. | a) Explain the IPOS operations for a supermarket barcode reader. | 5 |
| | b) What is Computer? List and explain various types of computers based on size, capability and price. | 6 |
| | c) Explain any 4 kinds of pointing devices used in computer systems. | 4 |
| | d) What is binary number System? Perform the following conversions: | 5 |
| | i) Binary to Decimal: 129 | |
| | ii) Decimal to Binary : 111011100111 | |
| 2. | a) Define operating system. Explain in detail its various functions. | 7 |
| | b) State the four categories of software. Explain each in detail. | 4 |
| | c) Illustrate in detail MAC OS. | 5 |
| | d) Write a short note on Assembler and Compiler | 4 |
| 3. | a) State different strategies for improving System performance | 6 |
| | b) What is Database? Explain importance of DBMS | 5 |
| | c) Explain different types of Printers. | 6 |
| | d) State difference between LED and LCD | 3 |

PART- B

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|----|--|---|
| 4. | a) Explain the different file types of MATLAB. | 7 |
|----|--|---|

- b) Write MATLAB commands for the following: 5
- i. To create a column vector
 - ii. To find size of matrix
 - iii. To multiply a matrix by a vector
 - iv. To find number of elements of a vector
 - v. To subtract two matrices.
- c) Define Bookkeeping? Explain the common methods of Bookkeeping. Also, explain the various data structures of typical banking system. 8
5. a) With a neat diagram explain symmetric key cryptography. Also state its limitations. 6
- b) Define Electronic banking. What are its common embodiments? Why there is a need for e-banking? 7
- c) What is hacking? Explain in detail the various measures that can prevent hacking. 7
6. a) Write short note on following: 8
- i. Hashing
 - ii. Cipher Feedback (CFB) mode
- b) What do you mean by view in MATLAB? Explain two viewing angles w.r.t 3-D plots. 6
- c) Explain different Internet and World Wide Web protocols. 6
- PART -C**
7. a) What are the four steps of machine cycle? Support your answer with neat diagrams how to process the command 5+3. 7
- b) List the various Proprietary Algorithm for symmetric key cryptography. 5
- c) Explain the following DOS commands with an example: 8
- i. COPY
 - ii. CD
 - iii. REN
 - iv. MKDIR
8. a) Explain virtual memory with a neat diagram. 7
- b) State features of Windows OS 6

c) Explain the following MATLAB commands:

- i. `sqrt(x)`
- ii. `exp(x)`
- iii. `ceil(x)`
- iv. `rank(a)`

4

d) Explain any 3 types of buses

3

