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**F.E. (Sem - I) (Revised Course 2016-17)**  
**EXAMINATION Nov/Dec 2019**  
**Fundamentals of Computer Engineering**

**[Duration : Three Hours]**

**[Total Marks : 100]**

**Instruction** 1) Attempt any two questions each from Section – I and Section – II  
and any one questions from Section - III

**Section –I**

**Answer any two question from the following**

- Q.1**
- a) Explain the characteristic of Monitor. 6
  - b) Explain why CD- ROM disc are not erasable but CR+RW disc are 5
  - c) Which types of storage media would be appropriate for someone who needed to exchange large (5 MB to 75MB) files with another person? List at least 3 different types, stating why each might be most appropriate under specific condition . 6
  - d) Define Database and explain its importance 3
- Q.2**
- a) With a neat diagram explain Bus network topology 5
  - b) Explain following linux commands with examples 5
    - i) cat ii) ls iii) cat iv) chmod v) pwd
  - c) Illustrate the working of CPU with a neat diagram 6
  - d) Explain different types of printer 4
- Q.3**
- a) Explain the components of IPOS cycle for supermarket barcode reading system. 6
  - b) Differentiate between Compilers and Interpreters 5
  - c) Explain different type of key board with their functionality 5
  - d) Explain the following DOS commands with examples: 4
    - i) MKDIR ii) COPY iii) CHDIR iv) MOVE

**Section – II**

**Answer any two questions from the following**

- Q.4**
- a) List and explain the risk in E-Banking 5
  - b) Differentiate between Symmetric and Asymmetric Cryptography 5
  - c) Write a matlab code to find factorial of a number 5
  - d) Write a matlab command to multiply a matrix  $A = \begin{bmatrix} 6 & -8 \\ 4 & 5 \end{bmatrix}$  by a scalar value 9. 2
  - e) Name the various technologies based banking products and services 3
- Q.5**
- a) Explain the need of Cyber Law 5
  - b) Discuss the implementation of security in UNIX operating System 6





- c) Create the following matrix A in matlab and replace the diagonal elements with zero 3

$$A = \begin{bmatrix} 6 & 8 \\ 4 & -1 \end{bmatrix}$$

- d) Explain the following functions in matlab 6  
i) polar ii) bar iii) eye

- Q.6 a) Explain Digital Signature . Explain the process of creating and verifying signature. 6  
b) List some of the security measures to prevent Hacking 6  
c) What is Book – keeping? Explain common methods of Book – keeping. 5  
d) List 3 functions for plotting 3D plots 3

### Section – III

Answer any one question from the following

- Q.7 a) How to locate a computer on internet using domain names and IP address 6  
b) Explain the characteristic of display devices 6  
c) List and explain any 5 function of operating system 4  
d) Perform the following operation using matlab code. 4  
i)  $x^2 - e^x$   
ii)  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

- Q.8 a) Explain Hash function in encryption technique 6  
b) Write short notes on i) Flash memory system ii) RAID 6  
c) What is audio input? Explain types of audio input. 6  
d) Write a MATLAB command to create a column vector that has values from -100 to +100 with the step size of 20. 2