

Total No. of Printed Pages:3

F.E. (Sem - I) (Revised Course 2016-17)
EXAMINATION MAY/JUNE 2019
Fundamentals Of Computer Engineering

[Duration : 3 Hours]

[Total Marks : 100]

Instructions

- Please check whether you have got the right question paper.
1. Attempt **any five** questions, by selecting **two** questions from Part-A, **two** from Part-B and **one** question from Part-C.
 2. Make **suitable** assumptions, **if required**.

PART-A

Answer **any two** questions from the following:

- | | | |
|-----|---|----|
| Q.1 | a) Explain the CPU components with the help of a neat diagram. | 06 |
| | b) State and explain any 2 coding systems for text-based data. | 04 |
| | c) What is Disk Access time? Explain the steps involved in disk access. | 04 |
| | d) Explain the following functions of an Operating system. | 06 |
| | i. File management | |
| | ii. Managing and Monitoring Resources and Jobs | |
| Q.2 | a) Write a short note on the Linux OS. | 06 |
| | b) What is URL? Explain some of the characteristics / structure of URL with the help of an example. | 05 |
| | c) Write a short note on USB flash drives. | 04 |
| | d) Explain in detail the various types of computer memory. | 05 |
| Q.3 | a) What do you mean by the binary number system? Convert 256 from decimal to binary. | 04 |
| | b) Explain the various processing techniques for increased efficiency by operating system. | 06 |
| | c) Explain the following DOS commands with a suitable example of each: | 06 |
| | i. CD | |
| | ii. FORMAT | |
| | iii. DEL | |
| | iv. REN | |
| | v. DIR | |
| | vi. FORMAT | |
| | d) Differentiate between Interpreter and Compiler | 04 |

PART-B

Answer **any two** questions from the following:

- Q.4 a) With a neat diagram explain Client Server Architecture. Also explain its components. 06
- b) Write short note on: 08
- Mobile Banking
 - Automated teller Machine
 - Smart Cards
 - Credits cards
- c) Write short notes on: 06
- Cipher block chaining mode
 - Data Encryption standard
- Q.5 a) Explain the three types of cryptographic schemes. 03
- b) Write short note on legal recognition of digital signature. 06
- c) Explain the security measures that prevent hacking. 05
- d) What is MATLAB and what are the various applications of MATLAB? 04
- e) Explain the use of following functions in MATLAB with a suitable example. 02
- fplot
 - bar
- Q.6 a) List the common embodiments of e-banking. 05
- b) Give three reasons why bookkeeping and banking is important. 03
- c) Explain the following functions of an operating system: 06
- Booting the Computer
 - Configuring Devices
- d) Consider the following matrix 06
- $$A = \begin{bmatrix} 10 & 78 & 32 \\ 8 & 12 & 72 \\ 81 & 80 & 27 \end{bmatrix}$$
- Write MATLAB commands that will perform each of the following operations on array A
- Create matrix A
 - Return first and second columns of matrix A
 - Transpose matrix A

PART-C

Answer **any one** questions from the following:

- Q.7
- a) What do you mean by a database? Explain importance of database. 04
 - b) State the difference between absolute addressing and relative cell referencing with the help of an example. 06
 - c) Explain RSA algorithm. 06
 - d) Write MATLAB commands for the following. 04
 - i. $A = \cosh^2 x - \sinh^2 x$ with $x = \pi$
 - ii. $6 \left(35^{\frac{1}{4}} \right) + 16^{0.35}$
- Q.8
- a) Explain the techniques Buffering and Spooling used by an operating system. 04
 - b) Explain how graphics data is represented in binary form. 06
 - c) Write a short note on hash algorithms. 06
 - d) Explain any two help functions in MATLAB. 02
 - e) Given vector $A = [10 \ 20 \ 30 \ 40 \ 50]$, write a MATLAB command to delete element 40 from vector A. 02