SEM 1 – 6 (RC-16-17)

F.E. (Semester – I) (RC 2016 – 17) Examination, May/June 2018
FUNDAMENTALS OF COMPUTER ENGINEERING

Duration : 3 Hours | Max. Marks : 100

Instructions : *1) Answer **any 5** 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. **(20)**

1. a) Distinguish between assembly level language and high level language. 4
   b) Explain PCI bus and AGP bus. 4
   c) State and explain any 2 coding systems for text-based data. 4
   d) Explain the characteristics of a monitor. 8

20

2. a) With a neat diagram, explain star network topology. 4
   b) What do you mean by a compiler ? Explain how it works. 4
   c) How to locate a computer on internet using domain names and IP addresses ? 6
   d) What do you mean by dpi with respect to a scanner ? 2
   e) Provide an example and the related output for the following Linux commands : 4
      i) pwd ii) ping iii) chmod iv) cat

(20)

3. a) Write short notes on laser printers and ink-jet printers. 4
   b) Explain the following DOS commands with a suitable example of each : 4
      i) COPY ii) DIR *.* iii) MKDIR iv) DEL
   c) What do you mean by RAID ? Explain its significance. 4
   d) Differentiate between application software and system software. 4
   e) Explain the 4 operations in the Information Processing Cycle. 4

P.T.O.

PART – B

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

(20)

4. a) State and explain any 6 common spreadsheet functions. **6**

   b) Create a 4 × 2 matrix of all zeros and store it in a variable. Then replace the second row in the matrix with 3 and 6. **4**

   c) Compare the following : **4**

      i) Smart card v/s Credit card

      ii) Asymmetric v/s Symmetric cryptography

   d) What are the various risks in electronic banking ? **4**

   e) Write MATLAB command to create a column vector that has the values – 1 to 1 in steps of 0.2 **2**

(20)

5. a) Explain in detail data encryption standard. **4**

   b) Write short note on legal recognition of digital signature. **4**

   c) Given the following matrices, show the results generated by these MATLAB command A.*I **2**

      I = eye (2)

      A = [7 9; 12 34]

   d) What is book-keeping ? Explain the common methods of book-keeping. **4**

   e) What is mobile banking ? **3**

   f) Create a vector, x, which consists of 20 equally spaced points in the range from – to +. Create a y vector that is sin (x). **3**

(20)

6. a) Explain any one symmetric key cryptography method. **4**

   b) Explain the various technology based banking products and services. **4**

   c) Explain the various hash algorithms. **5**

d) Write MATLAB command to create the following matrix A. 7

A = [3 5 1 0
6 8 0 2
9 1 3 1]

Write commands that will perform each of the following operations on matrix A.

i) To find the transpose of a matrix A.
ii) Return the maximum and minimum element of A.
iii) Return the first and second rows of A.
iv) Delete the second and third columns of A.
v) Multiply every element by 3.
vi) Sort matrix A.
vii) Create a matrix B of zeros with the same size as A.

PART – C

Answer **any one** question from the following. **(20)**

7. a) Explain the following functions of an Operating system : 6

i) File Management
ii) Security
iii) Booting the Computer.

b) What do you mean by a spreadsheet ? State the difference between absolute addressing and relative cell referencing. 3

c) What is the function of an assembler ? 2

d) Write short notes on : 6

a) Website
b) Domain name

e) Create a vector x with values ranging from 1 to 100 in steps of 5. Create a vector y that is the square root of each value in x. Plot these points with appropriate axis label and title of the plot. 3

(20)

8. a) Explain various types of recordable and rewritable discs. 4

b) Write MATLAB commands for the following expressions. (2×2)

i) area = πr^2 with r = $\pi^{2/5}$

ii) $y = \cosh^2 x - \sinh^2 x$ with $x = 32\pi$

c) Write a short note on the MAC OS. 4

d) Explain the following functions of an operating system : 6

i) Monitoring resources and jobs

ii) Multiprocessing and parallel processing

iii) Configuring devices

e) Explain the use of following functions in MATLAB with suitable example : 2

i) fill

ii) loglog.