

# SEM 1 – 6 (RC-16-17)

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

Duration : 3 Hours

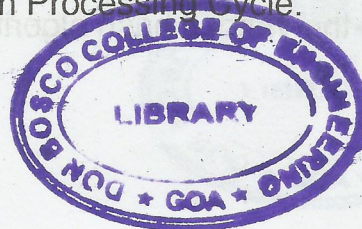
Max. Marks : 100

**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.

1. a) Distinguish between assembly level language and high level language. (20)  
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)

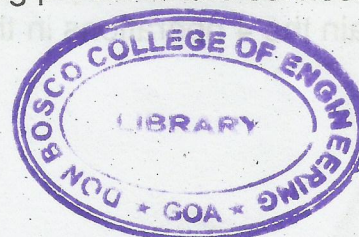
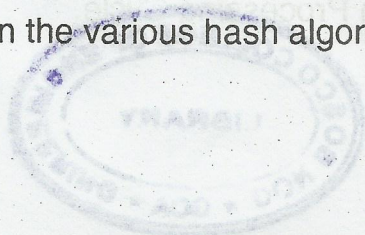
4. a) State and explain any 6 common spreadsheet functions. 6
- b) Create a  $4 \times 2$  matrix of all zeros and store it in a variable. Then replace the second row in the matrix with 3 and 6. 4
- c) Compare the following : 4
- i) Smart card v/s Credit card
- ii) Asymmetric v/s Symmetric cryptography
- 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)

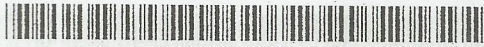
5. a) Explain in detail data encryption standard. 4
- b) Write short note on legal recognition of digital signature. 4
- c) Given the following matrices, show the results generated by these MATLAB command  $A.*I$  2
- $I = \text{eye}(2)$
- $A = [7 \ 9; 12 \ 34]$
- d) What is book-keeping ? Explain the 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

$A = \begin{bmatrix} 3 & 5 & 1 & 0 \\ 6 & 8 & 0 & 2 \\ 9 & 1 & 3 & 1 \end{bmatrix}$

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.

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c) What is the function of an assembler ?

2

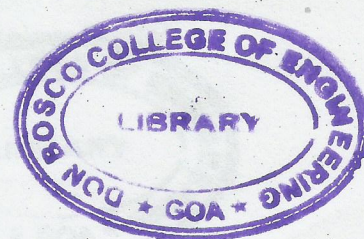
d) Write short notes on :

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. (2x2)
- i)  $\text{area} = \pi r^2$  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.

