



SEM 1 – 6 (RC 16 – 17)

F.E. (Semester – I) (Revised in 2016-17) Examination, Nov./Dec. 2018 FUNDAMENTALS OF COMPUTER ENGINEERING

Duration : 3 Hours

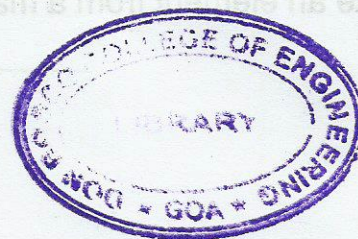
Total Marks : 100

- Instructions :** 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 :

1. a) Explain the different generations of computers. 6
b) What is a URL ? Explain the structure of an URL with the help of an example. 4
c) Explain how audio and video data is represented in binary form to be used with a computer. 4
d) What is binary number system ? Perform the following conversions : 6
 - i) Binary to Decimal : 109
 - ii) Decimal to Binary : 1110111
2. a) Write a short note on Assembler and Compiler. 6
b) Explain the following DOS commands with a suitable example of each : 4
 - i) FORMAT
 - ii) DIR
 - iii) DEL
 - iv) REN.
- c) Explain the four steps in a machine cycle. Explain the various machine cycles used to process the command 2+3. 8
d) What do you mean by cache memory ? 2



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3. a) What is Database ? Explain importance of DBMS. 4
b) Explain different types of Pointing devices. 6
c) Explain the following processing techniques utilized by an operating system : 6
i) Multitasking
ii) Multiprocessing, Parallel Processing
iii) Buffering and spooling
d) What do you mean by RAID ? Explain its significance. 4

PART – B

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

4. a) With a neat diagram explain symmetric key cryptography. Also state its limitations. 6
b) What is hacking ? Explain in detail the various measures that can prevent hacking. 6
c) Which are the various risks in electronic banking ? 4
d) Show the results generated by following MATLAB commands : 4
i) $a = 0 : 2 : 8$
ii) $b = -3 : 1 : 5$
5. a) Write short notes on : 6
i) Cipher block chaining mode
ii) Cipher feedback mode
b) Which are the various cases in which a certifying authority may revoke a digital signature certificate ? 5
c) Explain the windows of MATLAB. 4
d) Write MATLAB commands for the following : 5
i) To create a row vector
ii) To create a 2D array
iii) To add 2 matrices
iv) Transpose of matrix
v) Delete an element from a matrix.



6. a) Name the various technology based banking products and services. 4
- b) Given the following matrices show the results generated by MATLAB command A.*B 2
- B = eye (2)
- A = [17 20; 19 30]
- c) Explain different Internet and World Wide Web protocols. 6
- d) Describe the following functions in MATLAB with suitable example : 8
- i) fplot
 - ii) fill
 - iii) polar
 - iv) semilogx

PART – C

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

7. a) Explain the features of USB flash drives. 4
- b) Explain the components of a CPU. 6
- c) Explain the asymmetric key cryptography. 6
- d) Write MATLAB commands for the following : 4
- i) Area = πr^3 with $r = \pi^{2/7}$
 - ii) $7(45^{1/4}) + 13^{0.35}$
8. a) Write a short note on partitioning a hard drive. 5
- b) What is word processing ? Explain paragraph formatting and state its types. 5
- c) State general printer characteristics. 2
- d) Explain the following DOS commands with an example : 8
- i) COPY
 - ii) CD
 - iii) REN
 - iv) MKDIR.