2018

BCA 1st Semester Examination

COMPUTER FUNDAMENTALS AND APPLICATION

PAPER—1101

Full Marks : 70

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group–A

Answer Q. No. 1 and any *two* from the rest. 650

1. (a) What is signed binary number ? Explain with a suitable example.

   (b) Differentiate between software and firmware.

   (c) Define the terms : multiprogramming, multiprocessing, multitasking.

   (d) What is the function of a compiler ? 3+3+3+2

2. (a) With a suitable diagram briefly describe the Von Neumann architecture of computer.

   (b) What were the characteristics of first and second generation computers ? 6+(3+3)

3. (a) Simplify : $(A + C)(AD + AD') + AC + C$

   (b) Subtract $(99)_{10}$ from $(1000)_{10}$ using 10's complement method.

   (c) Find the value of X : $(10010)_2 = (x)_{16}$ 4+5+3

4. (a) How an optical disk differs with a magnetic disk ?

   (b) What is computer virus ? Explain the working mechanism of at least three categories of viruses.

   (c) Give two examples of storage device management utility softwares. 3+(1+6)+2

5. (a) What are the characteristics of a good algorithm ? Describe them.

   (b) What is pseudo-code ? Write the pseudo-code to determine the sum of first n natural numbers. 5+(2+5)

Group–B

Answer Q. No. *6* and any *two* from the rest.

6. (a) What is the need of virtual memory ? Describe a technique to implement virtual memory.

   (b) How do internal and external commands differ in MS DOS ? Give two examples for each type of commands.

   (c) What is hashtag ? (1+4)+(2+2)+2

7. (a) Briefly describe different types of memory access methods with example.

   (b) What is cache memory ? Define cache hit and cache miss.

   (c) Differentiate between SRAM and DRAM. 6+(2+2)+2

8. (a) With the help of a diagram, explain any two LAN topologies.

   (b) What do you mean by broadband transmission ? How baseband transmission differs with it ?

   (c) List all the layers in OSI reference model.

   (3+3)+(2+2)+2

9. (a) What is the significance of 'hypertext' and 'markup' in HTML ?

   (b) How an image can be inserted in a HTML page ? Give example.

   (c) What is network protocol ? What are the key elements of a protocol ? (2+2)+3+(2+3)

10. Write short notes : 4×3

   (a) FTP

   (b) LAN

   (c) FDM

   (d) ROM.