8. (a) What is computer malware ? How does it affect a computer system ?

   (b) Ten computers are connected with each other via a mesh topology. Determine the total no. of physical channels needed to construct the network and the no. of I/O ports needed for each device.

   (c) With a suitable example, describe how you will create a table in a HTML page ? 3+3+6

9. (a) Define Internet. Explain different services of Internet.

   (b) Explain repeater, HUB, Bridge. (2+4)+(2+2+2)

10. Write short notes : 4×3

   (a) WWW

   (b) E-Commerce

   (c) WAN

   (d) TDM.

NEW

2017

BCA 1st Semester Examination

COMPUTER FUNDAMENTALS

PAPER—1101

Full Marks : 70

Time : 3 Hours

The figures in right-hand the 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.

1. (a) Explain ASCII code and UNICODE. Which encoding technique will you prefer and why ?

   (b) What do you mean by software ? Draw the differences between system software and application software.

   (c) Define nibble. (2+2+2)+(2+2)+1

2. (a) Calculate $(1110)_2 - (101)_2$ using 1's complement method.

(b) Perform the following conversions :

(i) $(A72)_{16} = (?)_8$

(ii) $(333)_4 = (?)_5$

(iii) $(1010.0101)_2 = (?)_{10}$ 3+(3+3+3)

3. (a) State the postulates of Boolean algebra.

(b) Explain 4th and 5th generation of computer along their characteristics.

(c) Explain the different types of input devices. 2+(3+3)+4

4. (a) What is pseudo code ? Give example.

(b) Construct a flowchart to determine the sum of digits in an integer.

(c) What are the basic components of a flowchart ? (3+1)+5+3

5. (a) What is the difference between multitasking and multiprogramming ?

(b) How does magnetic ink character reader (MICR) recognize the magnetic character ?

(c) State and prove De Morgan's law for three variables.

(d) Implement $Y = \overline{AB} + A + \overline{B + C}$ using NAND gates only. 2+2+(2+3)+3

20

Group–B

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

6. (a) What is an operating system ? Briefly describe the front-end and back-end services of an operating system.

(b) Differentiate between primary and secondary memories.

(c) What is cache memory ? (2+2+2)+3+2

7. (a) Briefly explain how FTP is used to transfer files between a client and server.

(b) What do you mean by remote login ?

(c) Write down the responsibilities of application and physical layers in ISO/OSI reference model. 5+3+(2+2)