

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

(Turn Over)

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

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)

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.
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