Total No. of printed pages = 3

BCA 171101

Roll No. of candidate

15/31   2022

BCA 1st Semester End-Term Examination

COMPUTER FUNDAMENTALS AND ICT HARDWARE

Full Marks – 70   Time – Three hours

The figures in the margin indicate full marks for the questions.

(Answer Q No 1 and any *four* from the rest)

$(10 \times 1 = 10)$

1. Choose the correct option:

    (i)   Which of the following memory stores instructions needed to start the computer

        (a) RAM

        (b) ROM

        (c) Cache

        (d) None of the above

    (ii) If n devices are connected in a bus topology, the cable requirement is

        (a) n

        (b) n+1

        (c) n-1

        (d) None of the above

    (iii) Which of the following is the smallest visual element on a video monitor

        (a) Bit

        (b) Byte

        (c) Pixel

        (d) None of the above

    (iv) In OSI reference model, which layer deals with error correction of data

        (a) Physical layer

        (b) Data Link layer

        (c) Network layer

        (d) None of the above

[Turn over

(v) If 1001 is the gray code representation of a number then its binary equivalent is

    (a) 1101

    (b) 1110

    (c) 1010

    (d) 1111

(vi) When a computer is switched on, the booting process performs

    (a) Integrity Test

    (b) Power-On Self-Test

    (c) Correct Functioning Test

    (d) None of the above

(vii) Which memory is non-volatile and can be written only once?

    (a) PROM

    (b) EPROM

    (c) EEPROM

    (d) None of the above

(viii) Which of the following address is used for application to application delivery of messages

    (a) MAC Address

    (b) IP address

    (c) Port Address

    (d) None of the above

(ix) BIOS is used by

    (a) Compiler

    (b) Interpreter

    (c) Operating System

    (d) None of the above

(x) Which of the following values is the correct value of this hexadecimal code ABCDEF

    (a) 11259375

    (b) 11259379

    (c) 11259372

    (d) None of the above

2. (a) What is a computer? What are the advantages of using a computer Mention Some application of computer (2 + 3 = 5)

   (b) What are the different generations of computer? Give some salient features of each generation. (5)

   (c) What is BIOS? What is the function of BIOS? (3)

   (d) Mention two similarities between Intranet and Internet. (2)

3. (a) Use 2's complement to perform M-N with the given binary numbers (7)
      M=1010100 and N=1000100

   (b) What are the various components of a data communication system? (5)

   (c) Define simplex, half duplex and full duplex communication. (3)

4. (a) Convert $(1100110100)_2$ into (3)
      (i) Decimal
      (ii) Octal
      (iii) Hexadecimal

   (b) Convert the following to decimal number. (3 × 2 = 6)
      (i) $(11010011)_2$
      (ii) $(122)_8$
      (iii) $(12AB)_{16}$

   (c) The 2's complement representation of a 16bit number is FFFF. Find its magnitude in decimal form? (3)

   (d) What is computer port? Give examples. (3)

5. (a) Explain about the functionalities of different layer in OSI reference model (10)

   (b) What are networking and internetworking devices. (5)

6. (a) What is computer memory? What are the different types of computer memory? (7)

   (b) What is file system in a computer? Explain different types of file systems used in computer. (8)

7. (a) For the binary number 1101, find its (6)
      (i) Grey code
      (ii) Excess 3 code
      (iii) Even Parity Value
      (iv) Odd parity value
      (v) 1's complement
      (vi) 2's complement

   (b) What is disk clean up and disk defragmentation? Explain. (5)

   (c) Differentiate between static RAM and dynamic RAM. (4)

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