Total No. of printed pages = 3

BCA 171101

Roll No. of candidate

16/3/ 2021

B.C.A. 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 question No. 1 and any *four* from the rest.

1.   Answer the following questions :   (10 × 1 = 10)

   (i)   The length of MAC address of a computer is

      (a)   32 bit   (b)   48 bit

      (c)   16 bit   (d)   None of the above

   (ii)   Register memory is located

      (a)   inside CPU   (b)   inside main memory

      (c)   inside ROM   (d)   None of the above

   (iii)   Which of the following printer print one character at a time

      (a)   Drum Printer   (b)   Chain Printer

      (c)   Dot Matrix Printer   (d)   None of the above

   (iv)   Which of the following is a non weighted code?

      (a)   Gray Code   (b)   Excess 3 code

      (c)   Both (a) and (b)   (d)   None of the above

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

      (a)   1101   (b)   1110

      (c)   1010   (d)   1111

[Turn over

(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 memory store data permanently

    (a) Hard Disk   (b) DVD

    (c) Both (a) and (b)   (d) None of the above

(ix) In even parity if the number of 1' s in the original message is even, parity bit value is

    (a) 0   (b) 1

    (c) Both (a) and (b)   (d) None of the above

(x) If n devices are connected using a star topology, then the total cable requirement is

    (a) $n(n-1)$ (b) n

    (c) $n+1$ (d) None of the above

2.   (a) What is computer memory? What are the different types of computer memory?   (2+6=8)

    (b) Differentiate between static RAM and dynamic RAM.   (3)

    (c) Differentiated between point to point and multipoint connection.   (4)

3.   (a) Explain why complements are used in computer. Mention about different types of complements. Perform addition between 1101 and -1001 using 1's complement.   (1+2+4=7)

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

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

4.   (a) What is error correcting and detecting codes? Explain with a suitable example how checksum can be used to detect error.   (2+6=8)

    (b) What is a computer port? Mention about different types of ports used in a computer.   (2+5=7)

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5. (a) What is computer address? What are the different types of computer address? Explain with example. (2+6=8)

   (b) Find the class of the following IP address (2)

       (i) 00000001 00001011 00001011 11101111

       (ii) 11000001 10000011 00011011 11111111.

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

6. (a) Convert the following binary number into hexadecimal and octal number 0110100 10111. (2)

   (b) How many distinct lumber we can represent with 5 bit? (1)

   (c) What is software? Differentiate between application software and system software. (1+4=5)

   (d) What are the different generations of computer? Give some salient features of each generation. (7)

7. (a) What is network topology? What are its types? Explain with example. (1+1+8=10)

   (b) What is file system in a computer? Explain different types of file systems used in computer. (2+3=5)

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