# End Semester Examination of Semester–I, 2018

**Subject : BCA**

**Paper : BCA–101**

**(Computer Fundamental & Problem Solving Technique)**

**Full Marks : 70**

**Time : 3 Hrs**

*The figures in the margin indicate the marks corresponding to the question*

*Candidates are requested to give their answers in their own word as far as practicable.*

*Illustrate the answers wherever necessary*

## Group A

1. Answer **any five** out of eight questions: 2X5=10

   i) Define Virtual memory.

   ii) Convert hexadecimal to binary number : $(A5D7)_{16}$.

   iii) What do you mean by RISC and CISC?

   iv) What is parity bit?

   v) What do you mean by nibble and CPU word size?

   vi) What are the advantages of binary numbers over decimal numbers?

   vii) What do you mean by Von-Neumann bottleneck problem?

   viii) Write two-applications of Gray code.

## Group B

Answer **any five** out of seven questions : 5x4=20

2. What is swapping? What is throughput and response time? 2+1+1

3. Find A – B using 1's and 2's complement where A = 110110 and B = 10110. 2+2

4. What is topology? Write down the advantages and disadvantages of star topology. 1+3

5. Convert $10110_2$ to gray code. What do you mean by channel capacity? Give few examples of micro computer. 2+2+1

6. What do you mean by digital computer? Distinguish between mini-computer and micro-computer. 2+2

7. Distinguish between positional and non-positional number system. What do you mean by 8421 code? 2+2

8. What do you mean by reflected code? Give an example. What is the function of control bus? (2+1)+1

## Group C

Answer **any four** out of six questions: 10x4=40

9. What is the advantage of 2's complement over 1's complement? Write a short note on EBCDIC. Represent the number $(+46.5)_{10}$ as a floating point number with 16-bits for mantissa and 8-bits for exponent. What are the functions of OS? 2+3+2+3

10. What is a tri-state device? Distinguish between guided media and unguided media. Distinguish between MAN and WAN. What do you mean by biased exponent? What is the result of the following operation on unsigned two's complement numbers.

    10110100 – 01110111. 2+2+2+2+2

11. What are the importencies of Excess-3 numbers? Write down the process of Excess-3 number addition with suitable example. What is nibble? Which device supply power to live system clock when power supply is off? What is full form of EBCDIC? 2+5+1+1+1

12. What is data communication? What is communication media? Describe different types of noise. Write short note an optical fiber. 2+2+3+3

13. a) What is peer-to-peer networking? Mention some advantages and disadvantages of peer-to-peer network. 2+4

    b) What is O & I model? Discuss the function of Data-Link Layer of I&O-O&I Model. 2+2

14. Write short notes: $2\frac{1}{2}x4=10$

    a) Router

    b) Cache Memory

    c) Multi processing

    d) www