

Time : Three hours

Maximum : 80 marks

Answer any **FIVE** full questions.

Each carries **16** marks.

1. (a) Define Computer. Explain its characteristics in detail.  
(b) Explain the different generations of computer with examples. (8 + 8 = 16)
2. (a) Briefly discuss the processor and main memory architecture with neat labelled diagram.  
(b) Differentiate between RAM & ROM.  
(c) Define Control Unit. (10 + 4 + 2 = 16)
3. (a) Carry the following conversations :  
(i)  $110.101_{(2)} = ?_{(10)}$   
(ii)  $2B.C4_{(16)} = ?_{(10)}$   
(iii)  $42_{(10)} = ?_{(2)}$   
(iv)  $46_{(10)} = ?_{(8)}$   
(b) What is computer code? Explain any four computer codes. (8 + 8 = 16)
4. (a) Define logic gates. Name and explain each logic gates with truth table.  
(b) Simplify the following Boolean functions to minimum numbers of literals  
(i)  $F_b = x * y + \bar{x} * z + y * z$   
(ii)  $F_a = x + \bar{x} * y$   
(iii)  $xb = x * (\bar{x} + y)$  (10 + 6 = 16)
5. (a) What is software? Define system and application softwares. Explain the functions of operating system.  
(b) Describe the different types of Computer Programming Languages with its merits and demerits. (8 + 8 = 16)

6. (a) Explain different types of Transmission media. (8 + 8 = 16)  
(b) Define ISO-OSI reference model. Explain it with neat diagram.
7. (a) What is internet? Explain the applications of internet in various fields.  
(b) Define the terms :  
(i) e-mail  
(ii) Search Engine  
(iii) Web-Page  
(iv) URL (8 + 8 = 16)
8. Write a short note on any **FOUR** of the following : (4 × 4 = 16)  
(a) Input Devices  
(b) Different Symbols and its purposes of Flow Chart  
(c) Law of Boolean Algebra (De Morgan's Law)  
(d) Memory Unit  
(e) Switching Techniques  
(f) Cloud Computing.