Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Question No. 1 is Compulsory and attempt any two questions from each section. All questions carry equal marks.

1(a) What is ASCII code? Explain the difference between ASCII and EBCDIC code?

(b) What are sum of product form and product of sum form of logic expressions?

(c) What is full adder? Draw its logic diagram and illustrate its working with the help of truth table.

(d) What do you understand by associative memory? Explain in detail.

\[5 \times 4 = 20\]

\section*{SECTION A}

2(a) What do you mean by floating point representation of numbers? How will you represent a particular no in computer memory? Explain with the help of examples.

\[12\]

(b) State and Prove De Morgan’s law.

\[8\]

3(a) Draw the K-Map and simplify the Boolean expression:

\[10\]

\[\begin{align*}
\text{i.} & \quad Y(A,B,C)=\Sigma(0,1,2,3,4,7) \\
\text{ii.} & \quad Y(A,B,C,D)=\Sigma(0,2,4,6,8,10,12,15)
\end{align*}\]

(b) What do you mean by Boolean algebra? What are the Boolean postulates?

\[10\]

4(a) What do you understand by code converters? Explain with examples. Also explain BCD to binary conversion.

\[10\]

(b) Explain the working of S-R f/f with the help of suitable examples.

\[10\]

\section*{SECTION B}

5(a) What is memory hierarchy? Explain in detail.

\[12\]

(b) State the difference between RAM and ROM.

\[8\]

6. What do you understand by addressing mode? Explain the various addressing modes along with example.

\[20\]

7. What do you understand by processor organization? Explain the various types of organization in which processor can be organized.

\[20\]