8. Write a note on Associative Memory.

7. Illustrate the virtual memory concept.

6. Explain about DMA Transfer.

5. Handshaking:
   a) Strobe controls
   b) Write about asynchronous data transfer.

4. Write about addressing modes of 8085.

3. Draw and explain the pin out diagram of 8085.

2. Explain about multiplexers.

1. With neat diagram write about RS flip-flop.

10. Write about decoders.

9. Using Karnaugh map simplify the following:

8. Write about BCD adder with neat diagram.

7. \( 68.75 \times 22.5 \)

6. \( 68.75 + 22.5 \)

5. \( 68.75 \div 22.5 \)

4. Perform the binary addition, multiplication, and division.

3. Write any five questions.

2. Time: Three hours

Maximum: 100 marks

DIGITAL FUNDAMENTALS AND ARCHITECTURE

Information Technology

First Year

DECEMBER 2010

B.C.A./B.Sc. DEGREE EXAMINATION

(For the candidates admitted from 2007 onwards)

Q.P. CODE: 07 DSCA 02

P. No.

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8. Write a note on Associative Memory.

7. Illustrate the virtual memory concept.

6. Explain about DMA transfer.

5. Handshaking:

4. (a) Strobe control

3. Write about asynchronous data transfer.

2. Write about addressing modes of 8086.

1. Draw and explain the pin out diagram of 8085.

10. Explain about Multiplexers.

10. Explain about decoders.

10. Write about UART.

3. Using Karnugh map simplify the following using 'NOR' gates only.

(\( f(x,y,z) = \overline{x'y'z'} + x'y'z + xy'z + x'y + \overline{x'yz'} + \overline{x'y'z} \) )

10. Write about a parallel binary subtractor.

7. Prove De Morgan's Theorem.

6. Write about Boolean Expression.

5. Write a note on BCD adder with neat diagram.

4. Perform the binary addition, multiplication, and division.

3. Write any five questions.

Answer any five questions.

Time: Three hours

Maximum: 100 marks

DECEMBER 2010

B.C.A./B.Sc. DEGREE EXAMINATION

PART III — COMPUTER APPLICATION/COMPUTER SCIENCE

F. Year

PART III

DIGITAL FUNDAMENTALS AND ARCHITECTURE

Information Technology

For the candidates admitted from 2007 onwards.

G.P. Code: [07 DSCE 02] 07 DSCE 02 / 07 DSCE 02

Reg. No. :


1. Discuss in detail about singly linked list.

2. Explain different types of operators and string functions.

3. Write about preprocessor directive.

4. Discuss about formatted and unformatted I/O

(5 × 20 = 100)

All questions carry equal marks.

Answer any FIVE questions.

Time: Three hours

Maximum : 100 marks

DATA STRUCTURES AND C PROGRAMMING

Part III — Computer Science/Information Technology

First Year

B.S. DEGREE EXAMINATION, DECEMBER 2010

(For the candidates admitted from 2007 onwards)

9.P. Code: [07 DSC 02]

Ref. No.:
Write the dual of the above identities and prove the following identities:

(i)
\[ \text{If } A \cup (B \cap C) = (A \cup B) \cap (A \cup C) \]

(ii)
\[ \text{If } A \cap (B \cup C) = (A \cap B) \cup (A \cap C) \]

(iii)
\[ \text{Prove the principle of duality.} \]

2. Write the principle of duality.

20.
\[
\begin{bmatrix}
2 & -4 & 2 \\
3 & -6 & 7 \\
-4 & 2 & 8
\end{bmatrix}
\]

Matrix A = 

Find the eigenvalues and eigen vectors of the matrix.
(g) Prove that the relation $R$ defined on the set $A$ by $aRa$ for all $a$ in $A$ is an equivalence relation. $A = \{1, 2, 3, 4\}$.

(h) Prove that $S \circ R = S \circ (R \circ S)^{-1}$. $S = \{(x, y) \in A \times A \mid x < y\}$.

(i) Define the intersection of $R$ and $S$. $R = \{(x, y) \in A \times A \mid x + y = 0\}$.

(j) Let $R$ and $S$ be two relations from $A$ to $B$. $B = \{1, 2, 3, 4\}$.

(k) Write the symbolic form and negate the following statements:

- Everyone should help his neighbors or his work.
- Some people are not admired by everyone.
- Everyone who is healthy can do all kinds of work.

(l) Prove the following statements:

- $(a \land d) \iff (a \leftarrow d) \iff (a \rightleftharpoons d)$
- $(a \land d) \iff (a \leftarrow d \iff (a \rightleftharpoons d)$
- $(a \land d) \iff (a \leftarrow d) \iff (a \rightleftharpoons d)$
- $(a \land d) \iff (a \leftarrow d) \iff (a \rightleftharpoons d)$

(m) Show that:

- $B - A = (B \cup A) - A$.
- $A \cup V = B \cup V$.
- $B \cup V = B - V$.
- $(B \times V) \cap (C \times V) = (B \times V) \cap (C \times V)$.

(n) Show that for any two sets $A$ and $B$:

- $(B \times V) \cap (C \times V) = (B \times V) \cap (C \times V)$.
- $(B \cup C) \times V = (B \cup C) \times V$.
- $(B \cap C) \times V = (B \cap C) \times V$.

3. $\{a, b\} = \{\emptyset, \{\emptyset\}\}$ and $C = \{\emptyset, \{\emptyset\}\}$.
8. Write the definitions of:

(i) Graph
(ii) Digraph
(iii) Isomorphic Graphs with examples
(iv) Complete Graph
(v) Operation of traversing a binary tree.
(vi) Write the algorithms of traversing a binary tree.
4. Describe the different coding styles.

3. Explain the modules and modularity criterion.

2. Discuss the concept of waterfall level estimation.

1. What are the various steps involved in software engineering? Elaborate the steps.

All questions carry equal marks.

Answer any FIVE questions.

Time: Three hours
Maximum: 100 marks

SOFTWARE ENGINEERING
Part III - Computer Application/Computer Science
Second Year
December 2010
B.C.A/B.Sc Degree Examination
(For the candidates admitted from 2007 onwards)

Q.P. Code: [07 DSCA 06]

Reg. No.: D 42
1. Discuss in detail on sliding window protocols.

2. Describe in detail on error detection and correction codes.

3. Discuss in detail on communication satellites.

4. Explain with examples: the error detection and various layers in OSI Reference model.

5. With a neat sketch, explain the functions of various guided transmission media.

Part III — Computer Application/Computer Science

Third Year

DECEMBER 2010

B.C.A/B.Sc. Degree Examination

(REG. NO. : 07 DSCA 08/44)

(For the candidates admitted from 2007 onwards)