Unit Test - II

Bharati Vidyapeeth's college of engg. for women.

Academic year 2011-12

Sub:- DELD class:- S.E marks :- 50

* Instructions to candidates.

1) All questions are compulsory.
2) Neat diagrams must be drawn whenever necessary.

Q.1 A sequential circuit has a count DOWN from 111 to 100. The circuit also has an ilp X. If X=0 then the circuit will count DOWN & if X=1 then they will remain in the current state. Draw an ASM chart & state table for this circuit & design the circuit to generate the olp using MUX controller method. (14)

Q.2 Explain ring counter in detail (6)

Q.3 what is lock-out condition? How you resolve the lock-out condition explain with state diagram. (4)

Q.4 Design a sequence generator using T ffs.

$0 \rightarrow 1 \rightarrow 2 \rightarrow 4 \rightarrow 6 \rightarrow 0$

i) Draw the state diagram & state table
ii) write circuit excitation table.
iii) K-maps & simplification.
iv) Draw the logic diagram. (12)

Q.5 Draw & explain the TTL to CMOS & CMOS to TTL interfacing. (8)

Q.6 what is tri-state? what is the use of tri-state buffer? Explain with suitable circuit diagram. (6)

xox All The Best xox

Bharati Vidyapeeth's college of
Engineering for women,
Pune-43.

UNIT-TEST-II

subject :- Discrete Structures.

Marks - 30 S.E.(Computer Date:-
Time:-

- Attempt any three questions.
- Figures to right displays full marks.

Q.1 - Define with example, [10]

i) sets
ii) Multisets
iii) Cardinalities of sets & Multisets.
iv) Finite & infinite sets.
v) Difference of sets.

Q.2 solve [10]

i) prove using truth tables
$(P \rightarrow (Q \rightarrow R)) \Rightarrow ((P \rightarrow Q) \rightarrow (P \rightarrow R))$.

ii) Find out tautology & contradiction
a) $(P \wedge Q) \wedge \sim(P \vee Q)$
b) $P \vee \sim(P \wedge Q)$

Q.3

a) Define postulates of Group. [5]

b) show that algebraic system $(A, +)$ is a monoid where A is set of all integers & + is binary operation of two integers addition. [5]

Q.4 Define Ring, integral Domain and show that,
Every field is an integral domain. [10

College of Engg. Pune-43

Unit-Test II

Sub: Data structure & Algorithm

Marks: 50

S.E. Computer.

Q1. Write a 'C' function to concat two Circular linked lists

6 Marks

Q2. Write a 'C' function to reverse a given string using stack, check a given string palindrome or not using this function

6 Marks.

Q3. Write a 'C' function to create Circular Doubly linked list

8 Marks

Q4. Convert the following expression to postfix form & show stack status after every step in tabular form.

$$A+(B*C-(D/E-F)*G)*H$$

6 Marks

Q5. Write a 'C' function for

1. bubble sort
2. Insertion sort
3. Selection sort

18 Marks

Q6. Explain stack & applications of stack

6 Marks.

Unit Test - II

Class :- SE Computer

Subject :- PPS.

Total Marks : 50

Q1) Answer any 5 five (5) 8×5

1) Write an algorithm to find greatest common divisor of two integers.

2) Write an algo for base conversion

3) Write an algo for partioning an array.

4) Write a C++ program to implement the concept of inheritance with example.

5) Compare procedural language & object-oriented language for problem solving. Write advantages & disadvantages.

6) Given a set of n students, examination marks (in range 0 to 100) marks. Make a count of the no of students that obtained each possible mark.

Q2) Answer any one (1) 6×1

1) Write algorithm to find fibbonacci series

2) Explain with eg. objects & classes in C++

Q3) Answer any one (1) 4×1

1) Write an algorithm to reverse the digit.

2) Explain encapsulation & abstraction.