

I B.Tech Regular Examinations, May/Jun 2008
COMPUTER PROGRAMMING
(Common to Mechanical Engineering, Mechatronics, Production
Engineering and Automobile Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define Psuedocode.
(b) Define flowchart.
(c) What are the different stages in the program development? [3+3+10]
2. (a) What are the commonly used Input / Output functions used in 'C'. How they are accessed?
(b) What is the standard Input / Output header files in 'C'? How it is used? [10+6]
3. (a) Write short notes on register variable.
(b) Write a program to show the working of register variable in different blocks. [6+10]
4. Explain an array , array declaration and features of array. [16]
5. (a) How bits are manipulated using bit fields in 'C' explain?
(b) What is the use of typedef in structure declaration? [8+8]
6. What is the purpose of library function feof()? How might feof() be utilized within a program that updates an unformatted data file? [16]
7. Write a program to evaluate the following expression $X = A / B + C$ infix to postfix using stack. [16]
8. (a) Write a program to swap nodes in a binary tree.
(b) Write a program to delete node in a binary tree. [8+8]

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1. (a) Define Pseudocode.
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(c) What are the different stages in the program development? [3+3+10]
2. (a) How can short integer, long integer and double precision arguments be indicated within the control string of the scanf function.
(b) What are the rules for writing printf and scanf statements? [8+8]
3. Explain call by value and call by reference and nesting of function. [16]
4. Explain an array , array declaration and features of array. [16]
5. (a) Write a program to print name, address using structure.
(b) Write a program to print name, marks using structure. [8+8]
6. What is the purpose of ferror() and perror() explain with an example. [16]
7. Write a program to evaluate the following expression $A * B + (C - D) / A$ to prefix using stack. [16]
8. (a) What is a network?
(b) What is a spanning tree?
(c) Define minimal spanning tree.
(d) What are the various traversals in a tree? [4+4+4+4]

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(c) What are the different stages in the program development? [3+3+10]
2. (a) Explain about gets and puts function explain with example.
(b) What is the difference between gets and getc function? [10+6]
3. Write a program to swap the contents of given variable. [16]
4. (a) Write short notes on pointer to void.
(b) Write short notes on Address Arithmetic. [8+8]
5. Define Structure and write the general format for declaring and accessing structure members with an example. [16]
6. (a) Describe data file hierarchy.
(b) Write the syntax for opening and closing a file. [8+8]
7. Explain the applications of stack and queue in detail. [16]
8. (a) What is a network?
(b) What is a spanning tree?
(c) Define minimal spanning tree.
(d) What are the various traversals in a tree? [4+4+4+4]

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2. (a) What are the commonly used Input / Output functions used in 'C'. How they are accessed?
(b) What is the standard Input / Output header files in 'C'? How it is used? [10+6]
3. What is the working of following functions :
(a) ceil(x)
(b) exp(x)
(c) cos(x)
(d) tolower(x). [16]
4. Define Multi dimensional array with an example. [16]
5. How structure members are accessed using pointer variable, explain with example? [16]
6. (a) What is meant by opening a file? How is this accomplished.
(b) Summarize the rules governing the use of fopen function. [8+8]
7. (a) How the linear search gets differed from binary search?
(b) Write a program to perform bubble sort for given elements {10,7,15,28,13}. [6+10]
8. Explain Dijkstra's shortest path algorithm. [16]
