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B.E. / B.Tech (Full Time) End Semester DEGREE EXAMINATIONS,  
NOV / DEC 2011

First Semester

Common to All Branches

GE 9112 - FUNDAMENTALS OF COMPUTING

(Regulation 2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 × 2 = 20 Marks)**

1. Define information processing cycle
2. What is "bus", in the context of computer hardware ?
3. What is www?
4. What is pixel ? How it improve the quality of an image file?
5. Compute number of bytes allocated for the following declaration :  
int a[5], x;  
char c, name[10];  
float f;
6. Write a necessary "if" statement to check whether a year is leap year when any one of the following conditions satisfied:  
i) year is a century year (like 1200, 1900), divisible by 400  
ii) year is other than century year, divisible by 4
7. What is the output of the following code, when a=13,b=5 ?  
i=0;  
while(a>b)  
{ a=a-b;  
i ++;}  
printf("\n %d , %d", i, a);

8. Write a similarity and a difference between array and structure variable ?
9. How the pointer variable is differ from other normal variables ?
10. What is meant by "Dynamic" allocation ?

**PART - B (5 × 16 = 80 Marks)**

11. i) Explain various operators used in C program. For each operator, specify its precedence and the allowable data types with example.  
ii) Write a C program to search a given number from a set of numbers, stored in an array. If found, display its position in array, else display "Not Found".  
E.g: search 7 in the set : 10 8 12 7 5 9 20.  
Output : Found, at location 4 (8+8)

12. a) i) List the various types of "memories" used in a Computer Sytem at different levels. Explain each with neat sketch and mention its hierarchical level, its organisation and limitation, if any. (10)  
ii) Name any four network components with its usage (6)

**(OR)**

- b) i) What is network topology ? Describe the various network topologies with neat sketch. (8)  
ii) What is the importance of "software" part of a computer? Justify your answer with Operating System software (8)
13. a) i) What is Database Management System ? Define the terms, "table", "row" and "column", in the context of DBMS with an example for each.

ii) Compare the image editing software “paint” with drafting software “AutoCAD”? What is the major difference between these two ? (10 + 6)

(OR)

- b) i) Brief any four services of internet ? (6)
- ii) Narrate the various sending options available in any email system, with example. (6)
- iii) What are the components of a internet web address ? (4)

14. a) i) What are the rules associated switch-case statement ?  
ii) Write a necessary program segment using switch-case statement for the following : With starting date 1 for Sunday, display the day for a given number, up to 31. Display “invalid date” for the number, not in the range of 1 to 31.

E.g: 3 -> Tuesday, 7-> Saturday, 8 -> Sunday, 9->Monday, 29->Sunday

ii) How the symbols “#”, “?”, “.” are used in C ? Give example for each: (4+6+6)

(OR)

b. i) Define a structure, ”car” with member elements as, manufacturer name, engine capacity, fuel consumption and price. Create the tags, alto, figo and polo. Example values for alto : “maruthi,900,18.7,285000”

ii) What is function ? What are its components ?

iii) Write a function which returns an upper case single character for a passing word. Using this function, write a main program to convert the given sentence into acronym.

E.g: function wtoc(“central”) returns ‘C’ and while calling with

string “central processing unit”, display “CPU” (6+4+6)

15. a) i) What is the purpose of “malloc” function ? Write the syntax and give an example to accommodate 10 integer values.

ii) Write necessary statements to implement the following with equivalent pointer representation.

int a[7] = {18,12,5,9,14,7,15} (10+6)

(OR)

b) i) What is linked list ? What are the two major parts of a node ?

Draw a linked list with five nodes.

ii) Write a program to show following pattern, for a given base size.

E.g if the base size is 6,

```
*
**
***
****
*****
*****
*****
****
***
**
*
```

iii) Consider the following declarations

int a[5]={8,5,2,9,3}, b[5];

char name[10]=”country”, str[10];

Write the necessary statements, to store *a* to *b* and *name* to *str*.

(6+6+4)

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