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**Question Paper Code: U2805**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Second Semester

Information technology

21UIT205- C Programming

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1. What is the difference between the prefix and postfix forms of the ++ operator? CO1- U
2. What is an assignment statement and how to write it? Explain with its syntax and a simple example CO1- U
3. Write a program to request a whole number and print the number and its square. CO2- App
4. The current year and the year in which the employee joined the organization are entered through the keyboard. If the number of years for which the employee has served the organization is greater than 3 then a bonus of Rs. 2500/- is given to the employee. If the years of service are not greater than 3, then the program should do nothing. CO2- App
5. Define an array? How to declare array and access elements in an array? CO3- U
6. How to declare and initialize 2-dimensional array with its syntax ? CO3- U
7. How to represent self-referential structures? CO4- U
8. How to access a member of a structure with its syntax? CO4- U
9. How would you open() and close() a file? Write the syntax and sample coding CO5- U

10. Point out the errors, if any, in the following programs:

```
main()
{
    char fname[] = "c:\\students.dat";
    FILE *fp;
    fp = fopen ( fname, "tr" );
    if ( fp == NULL )
        printf ( "\nUnable to open file..." );
}
```

CO5- App

PART – B (5 x 16= 80Marks)

11. (a) If cost price and selling price of an item is input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred. The marks obtained by a student in 5 different subjects are input through the keyboard. CO1-App (16)

The student gets a grade as per the following rules:

Percentage above or equal to 60 - First grade

Percentage between 50 and 59 - Second grade

Percentage between 40 and 49 - Third grade

Percentage less than 40 - Fail

Or

(b) List the various types of operators and write a program with neat command line explanation about the program and the output specification in detail CO1-App (16)

12. (a) Outline the characteristics of break, continue and go-to statement with syntax and example program CO2-U (16)

Or

(b) Define function? Illustrate with syntax and a program that how a function can be defined, declared and called. CO2-U (16)

13. (a) Develop a program that receives the month and year from the keyboard as integers and prints the calendar in the following format. CO3-App (16)

September 2004						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Note that according to the Gregorian calendar 01/01/1900 was Monday. With this as the base the calendar should be generated.

Or

- (b) To write a c program to check whether the given string is palindrome or not and also explain the program and output in detail CO3-App (16)
14. (a) Define Structure with sample program and explain its block structure in detail with neat diagrammatical explanation CO4-App (16)
- Or
- (b) Differentiate “ Pointer of array” & “array of pointers” and also write an example program and show the difference based on the sample output. CO4-App (16)
15. (a) Write C program for any two file handling function and also Summarize all the following random file handling functions in detail with respective syntax CO5- U (16)
- ftell()
  - fseek()
  - rewind()
  - fgetpos()
  - fsetpos()
  - remove()
  - Renaming().

Or

- (b) Explain the different operations on a file and also illustrate how a file can be accessed. Write a program to copy one file to another. While doing replace all lowercase characters to their equivalent uppercase characters. CO5- U (16)

