AR13 SET-02

Code:13CS1001

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT,TEKKALI
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, March – 2015
COMPUTER PROGRAMMING
(Common to CE, ME, CSE & IT Branches)

Time: 3 Hours **Max Marks: 70**

PART–A

Answer all questions **[10X1=10M]**

1. a) Define flowchart
   b) List out Arithmetic operators used in C
   c) Write the general form of shorthand assignment operator
   d) Write the general form of for loop
   e) What does function header contains
   f) What is the scope of global variables
   g) Write the general form of strcat() function
   h) Define a pointer variable
   i) Write the operation of getc( ) function
   j) What will be the output of the following program

```
main()
{
int a=100,b=200;
c=(a==100||b>200)
printf("c=%d",c);
}
```

PART-B

Answer one question from each unit **[5X12=60M]**

UNIT – I

2. a) Write about Machine, Symbolic and High-level languages
   b) Write an algorithm, draw the flow chart and write a C program to calculate area of a square using the formula : area=side x side

(OR)

3. a) Write in detail about program development steps.
   b) Write an algorithm, draw the flow chart and write a C program to calculate average of 3 given numbers

UNIT-II

4. a) Write about nested if ... else statements with its general form ,flow chart and with a suitable example.
   b) Write a C program which reads 3 integers and prints the largest among them using nested if…else statement.

(OR)

5. a) Write about switch statement with suitable example.
   b) Write the general form of do…while loop. Write a C program to evaluate $Y=X^n$

UNIT – III

6. a) Write about recursive functions? Write a C program to find n^{th} Fibonacci number using recursion
   b) Write a C program to do matrix addition

(OR)

7. a) Write about declaration and accessing of Two-Dimensional arrays with suitable example.
   b) Write about string handling functions with suitable examples.

UNIT – IV

8. a) Write about pointers as function arguments with suitable examples.
   b) Write a C program that will receive a file name and a line of text as command line arguments and write the text to the file.

(OR)

9. a) Write about definition , declaration , accessing of structure members with suitable examples
   b) Write about Arrays with in structures with suitable examples

UNIT – V

10. Write about defining , opening and closing a file.

(OR)

11. Two files LIST1 and LIST2contain sorted list of integers . Write a C program to produce a third file LIST which holds a single sorted , merged list of these two lists. Use command line arguments to specify the file names.

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AR13 **SET-02**

Code: 13ME1003

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

I B. Tech I Semester Supplementary Examinations, March-2015

ENGINEERING MECHANICS

(Common to EEE & ECE)

Time: 3 hours **Max Marks: 70**

PART-A

Answer all questions **[10X1=10M]**

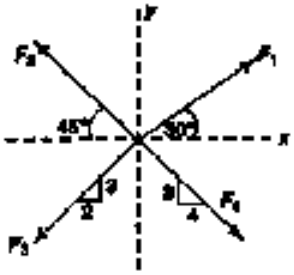
1. a) State parallelogram law of forces ?
   b) Any quantity that possess direction as well as magnitude is called __.
   c) What is meant by Free body diagram
   d) What is coplanar concurrent force system.
   e) Define angle of limiting friction
   f) Centroid of a circle lies at ____.
   g) Second moment of area is also called as ___.
   h) Square of radius of gyration multiplied by total mass of the body is called ___
   i) Define acceleration.
   j) State DAlembert's principle.

PART – B

Answer one question from each unit **[5X12=60M]**

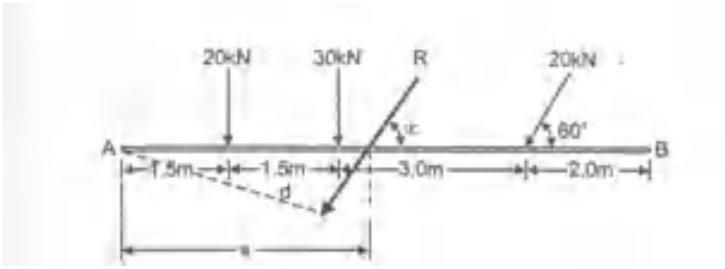
Unit -1

2. Find the magnitude and direction of resultant of concurrent forces shown in fig. F_1=1500 N F_2= 2000 N F_3= 3500 N and F_4=1000 N



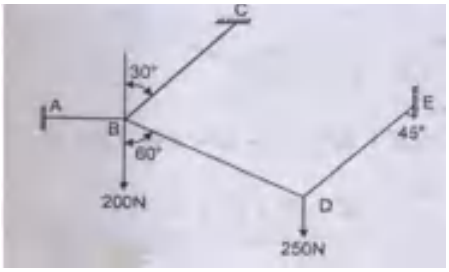
(OR)

3. A system of forces acting on a beam is shown. Determine the resultant of the loads.



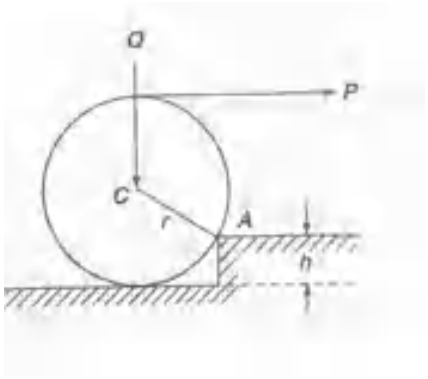
Unit -2

4. A system of connected flexible cables shown in fig is supporting two vertical forces 200 N and 250 N at points B and D .Determine the forces in various segments of the cable



(OR)

5. A roller of radius r = 300 mm and weight Q=2000 N is to be pulled over a curb of height h= 150 mm by a horizontal force P applied to the end of a string wound around the circumference of the roller as shown. Find the magnitude of P required to start the roller over the curb.

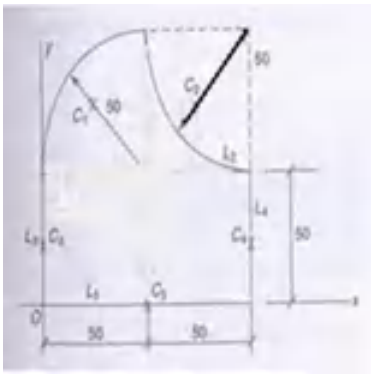


Unit - 3

6. A block of weight W^1 = 900 N rests on the horizontal surface and supports on top of it , another block of weight W^2 = 225 N .The block W^2 is attached to a vertical wall by the inclined string AB .Find the magnitude of the horizontal force P applied to the lower block that will be necessary to cause slipping to impend. Take coeff of friction for all surfaces as 0.3

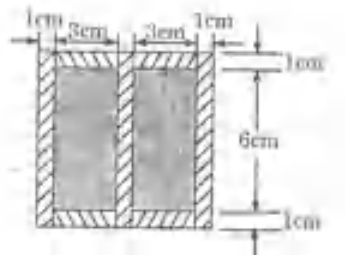
(OR)

7. A string of uniform cross section is bent in the form as shown. Locate the centroid.



Unit -4

8. Calculate the moment of inertia of the hatched area in figure below with respect to centroidal X and Y axes. The total horizontal length is 9 cm.

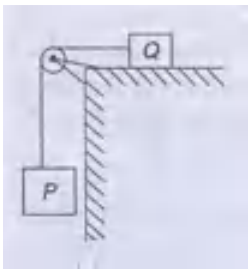


(OR)

9. Derive the equation for moment of inertia of circular plate of radius R and thickness t about the centroidal axis.

Unit - 5

10. Prove that the acceleration of the falling weight P is $\frac{(P-\mu Q)g}{P+Q}$ if the coeff of friction between the block Q and the horizontal plane on which it slides is μ . Neglect inertia of pulley and friction on its axle .



(OR)

11. Two cars are travelling towards each other on a single lane road at the velocities 12 m/sec and 9 m/sec respectively. When 100 m apart , both drivers realise the situation and apply brakes. They succeed in stopping simultaneously and just short of colliding. Assume constant deceleration for each case determine (i) time required for cars to stop (ii) deceleration of each car .

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