AR13

Code: 13CS1001 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B. Tech I Semester Supplementary Examinations, Jan / Feb-2016
COMPUTER PROGRAMMING
(CE, ME, CSE & IT)

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

PART-A

Answer all questions **[10 x 1=10M]**

1. a) What is a function?.
   b) How does a while loop differ from do-while loop?
   c) What is the use of sizeof( ) function?
   d) What is the return value of scanf( ) function?
   e) What is the purpose of **break** statement?
   f) Define a global variable?
   g) Is main() function user defined or pre defined? Justify your answer
   h) Define a file pointer with example?
   i) What is the output of the following C program?

```
Void main ()
{
  int a=30,k;
  k=(a>10 ? (a<=20 ? 50: 100) : 200);
  printf("k:%d a:%d", k,a);
}
```

   j) Difference between getc( ) and getch( )?

PART-B

Answer one question from each unit **[5 x 12=60M]**

UNIT-I

2. a) Define a Algorithm and flow chart ? Write an algorithm and draw the flow chart for finding roots of quadratic equation.

   b) Explain in detail about program development steps. [6M+6M]

(OR)

3. a) Explain in detail about any three types of operators with examples.
   b) Explain about C keywords in detail. [9M+3M]

UNIT-II

4. a) Explain about all types of **if** condition control structures with its syntax, flow charts and examples,.
   b) Write a program to check whether the given number is strong number or not.
   (Hint : 145 = 1! + 4! + 5!) [8M+4M]

(OR)

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5. a) Write a C Program to produce the following output using nested loops.

```
    1
  1 2 1
1 2 3 2 1
1 2 3 4 3 2 1
```

b) Explain about switch statement with syntax and flow chart .Write program to find the area of a triangle using a) sides are given b) base and height are given c) co-ordinates are given

[6M+6M]

UNIT-III

6. a) What is two dimensional array and write the syntax? Write a program for matrix addition?
b) Explain any two string handling functions.

[8M+4M]

(OR)

7. a) Explain various types of functions according to return value and arguments with example programs.
b) Write about all storage classes with examples?

[6M+6M]

UNIT-IV

8. a) Explain in detail about definition, declaration and initialization of a structure with example program
b) Write a program to illustrate the method of passing an array as a parameter to a function?

[6M+6M]

(OR)

9. a) Write a 'C' program to illustrate the difference between structure and union.
b) Write a program to use an array with in a structure.

[6M+6 M]

UNIT- V

10. a) Define a file and elaborately discuss about reading, opening and closing of a file.
b) Write a C program to create a file with some content and retrieve it

[6M+6M]

(OR)

11. a) Write a program to create a file with some integers and read the numbers from the file and display even and odd separately.
b) Explain about formatted file I/O and unformatted file I/O operations with syntaxes.

[8M+4M]

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Code: 13ME1003 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B. Tech I Semester Supplementary Examinations, Jan / Feb-2016

ENGINEERING MECHANICS
(Common to EEE & ECE)

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

PART-A

Answer all questions **[10 x 1=10M]**

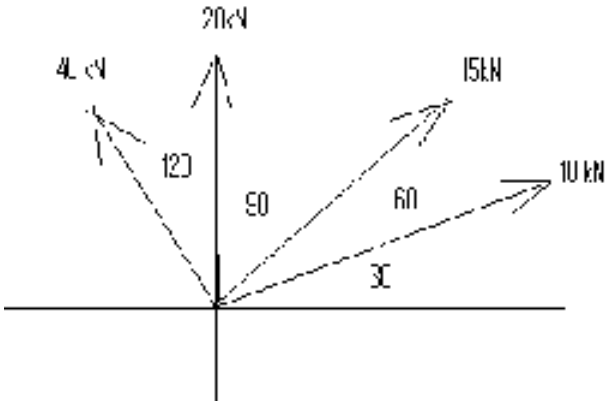
1. a) What is free body diagram
   b) Write the equilibrium equations for concurrent forces in a plane
   c) Define collinear forces in a plane
   d) Define dry friction
   e) Define the term Moment of Inertia
   f) Define normal acceleration
   g) State Parallel axis theorem
   h) Define D-Alembert's principle
   i) Define Centre of Gravity
   j) Define Plane motion

PART – B

Answer one question from each unit **[5x12=60M]**

UNIT -1

2. Four forces of magnitude 10 kN,15kN, 20kN and 40kN are acting at a point O. The angles made by 10 kN, 15kN, 20kN and 40kN with x-axis are 30^o, 60^o,90^o,120^o respectively. Find the magnitude and direction of resultant force.

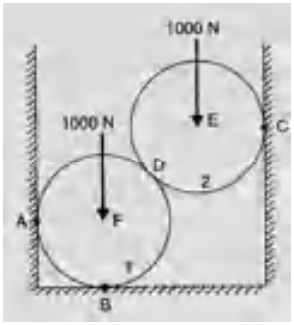


(OR)

3. (a) State and prove the varignons theorem
   (b) Discuss graphical and analytical methods for finding resultant of several coplanar concurrent forces

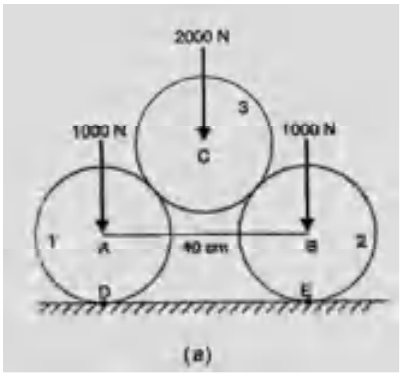
UNIT -2

4. Two spheres, each of weight 1000N and radius 25 cm rest in a horizontal channel of width 90 cm as shown in fig. find the reactions on the points of contact A,B and C



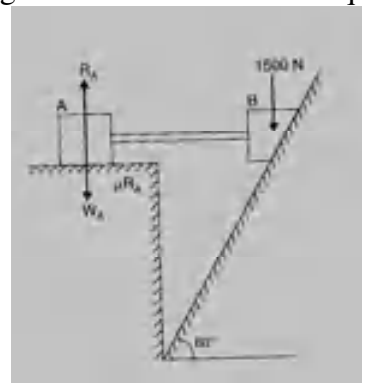
(OR)

5. Two smooth circular, each of weight w = 1000N and radius 15cm, are connected at their centres by a string AB of length=40cm and rest upon a horizontal plane, supporting above them a third cylinder of weight=2000N and a radius 15cm as shown in fig. find the force S in the string AB and pressure produced on the floor at the points of contact D and E.



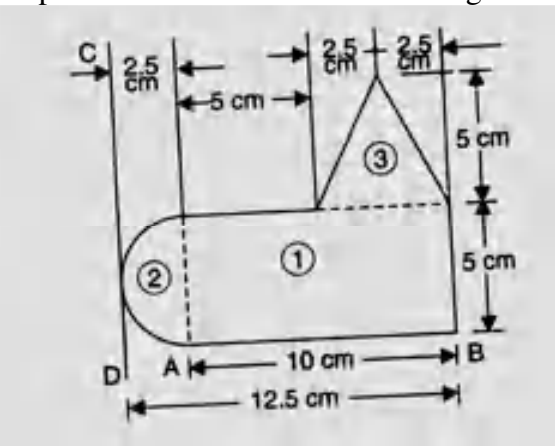
UNIT - 3

6. Two blocks A amd B are connected by a horizontal rod and are supported on two rough planes shown in Fig. if the weight of block B is 1500N and coefficient friction of block A and B are 0.25 and 0.35 respectively., find the smallest weight of block A for which equilibrium can exist.



(OR)

7. Find the centre of gravity of the plane uniform lamina shown in fig:



UNIT -4

8. Calculate the moment of inertia of the shaded area in figure about the edge.

(OR)

9. Derive the expression mass moment of right circular cone of Base radius R, height H and Mass abouts its mass M about its Axis.

UNIT- 5

10. A fly wheel is rotating at 200 rpm and after 10 seconds it is rotating at 160 rpm. If the retardation is uniform, determine number of revolutions made by the fly wheel and the time taken by the flywheel before it comes to rest from the speed of 200 rpm.

(OR)

Code: 13ME1003 **SET-1**

11. Two bodies of weight 50N and 30 N are connected to the two ends of light inextensible string. The string is passing over a smooth pulley determine :

(i) the acceleration of the system
(ii) tension in the string , take g=9.8 m/s^2