Code No: 11006/BL

FACULTY OF ENGINEERING

BE I-Year (Backlog) Examination, May / June 2019

Subject: Programming in C & C++

Time: 3 Hours **Max. Marks: 75**

Note: Answer All Questions From Part-A & Any Five Questions From Part-B.

PART- A (25 Marks)

1.	List and explain logical operators.	3
2.	Draw block diagram of a computer.	2
3.	What are multi dimensional arrays?	3
4.	What is #include directive?	2
5.	What is self referential structure?	2
6.	Differentiate between C and C++ programming.	3
7.	What are access specifiers?	3
8.	What is inline function?	2
9.	What are static data members?	3
10.	What are default arguments?	2

PART-B (50 Marks)

11.a)	What are components of a computer? Explain functions of each component.	7
b)	Discuss various symbols used in flow charts, with an example.	3
12.	Explain selection control structure with examples.	10
13.a)	Write a program for implementing binary search.	5
b)	Explain call by value technique with example.	5
14.a)	What are different operations which can be performed on pointers?	5
b)	Write a program using structures for reading and printing employee records containing name, employee id, department and salary.	5
15.a)	Write a program for copying contents of one file to another.	5
b)	Write a program to overload binary operator.	5
16.	Explain in detail the concept of exception handling with an example program.	10
17.	Write short notes on:	
a)	Virtual functions	4
b)	Class templates	3
c)	Default arguments	3

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FACULTY OF ENGINEERING & TECHNOLOGY

B. E / B. Tech. (Bridge Course) II – Semester (Backlog) Examination, May/Jue 2019

Subject: Engineering Mechanics

Time: 3 Hours **Max. Marks: 75**

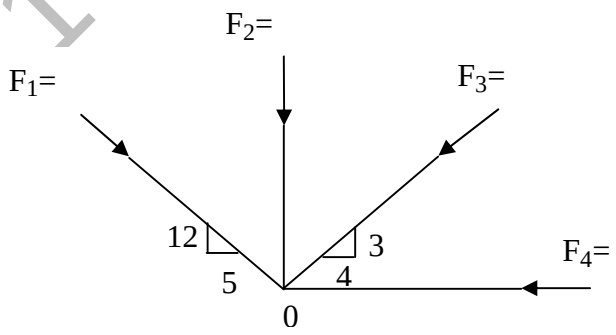
Note: Answer All Questions From Part-A, & Any Five Questions From Part – B.

PART – A (25 Marks)

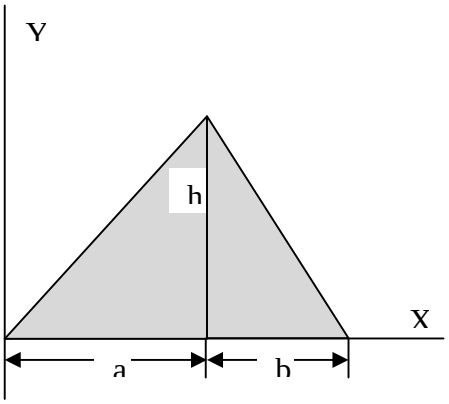
1. Two locomotives on opposite banks of a canal pull a vessel moving parallel to the bank. The tensions in the ropes are 2000N and 1500 N while the angle between them is 60º. Find the resultant pull on the vessel and angle between each rope and sides of canal. 3
2. Write the equations of equilibrium for coplanar concurrent and coplanar parallel forces. 2
3. Differentiate the terms centroid and centre of gravity. 3
4. What are the different types of friction? Explain briefly. 2
5. State and prove perpendicular axis theorem of M.I. 3
6. Calculate the radius of gyration if the radius of circular section is 300 mm. 2
7. A stone is thrown vertically upwards and returns to earth in 3 sec. How much height does it go? 3
8. Sate D'Alermbert's principle. 2
9. What is forced vibration? 2
10. A SHM is defined by relation a =- 36 S. Determine its period and frequency. 3

Part – B (50Marks)

11. A gusset plate is subjected to four forces concurrent at point O. Find the magnitude and direction of the resultant. 10



12. Find centroid of a triangle with reference to x and y axis. 10



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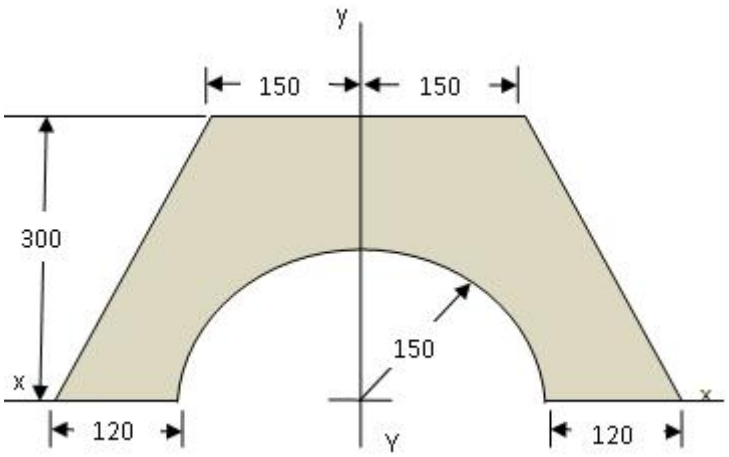
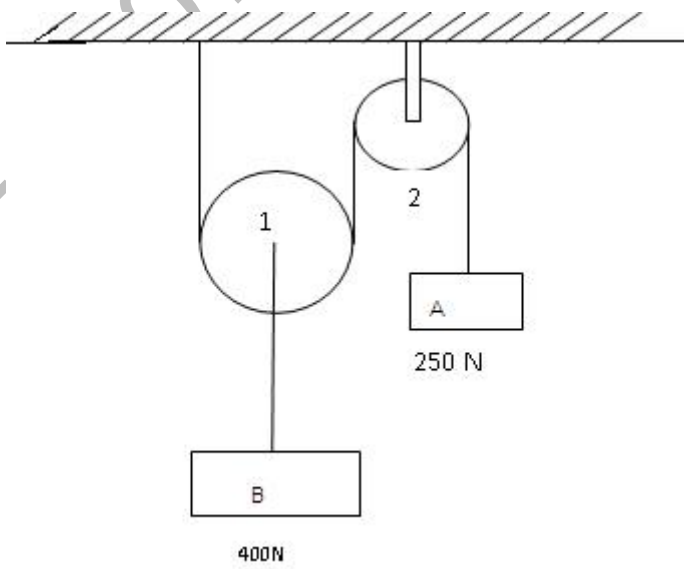
13. Determine area moment of inertia about the xx and yy axes.



14. The velocity of a particle moving in a straight line is given by the expression $V = 2t^3 - t^2 - 2t + 4$. The particle is found to be at a distance of 10m from station A after 2 seconds. Determine (a) acceleration (b) displacement after 6 seconds. 10

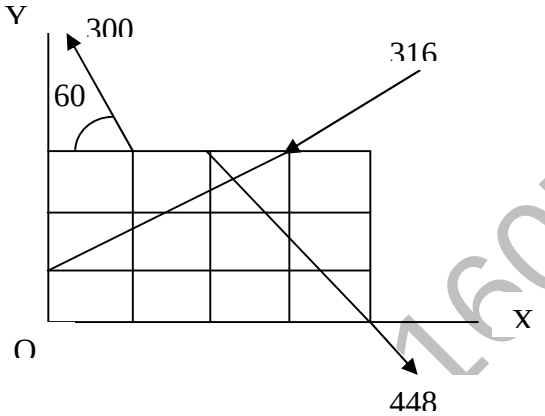
15. Two blocks A and B are connected by inextensible wires as shown in fig.below. Find how much distance block B will move in increasing its velocity to 5 m/s from 2 m/s. Assume pulleys are frictionless and weightless. 10



16. A particle moving with SHM has a maximum of 12 m/s. Determine the velocity and acceleration of the particle when it is midway between the centre and right end of its path. How long does it take to move from the centre to the specified position? 10

Contd...3

17. A flat plate is subjected to coplanar force system .Find resultant and its X and Y intercepts. Each grid is a square of 1m by 1m. 10



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