Code No: A109100103 **Set No. 1**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

I B.Tech. II Mid Examinations, March – 2011

ENGINEERING MECHANICS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. The C.G.of solid right circular cone lies on the axis at a height [ ]
   A) half of total height above base B) one third of total height above base
   C) one fourth of total height above base D) none of the above.

2. The point through which the whole weight of body acts is [ ]
   A) center of gravity B) area moment of inertia
   C) polar moment of inertia D) none of the above

3. Moment of inertia of triangular section of base b and height h about an axis passing through its vertex and parallel to the base is ___ times as that passing through its C.G. and parallel to the base. [ ]
   A) 2 B) 4 C) 8 D) 9

4. Unit of mass moment of inertia is [ ]
   A) $Kg.m^2$ B) m^4 C) Kg.m D) none of the above

5. A circular hole of radius (r) is cut out from a circular disc of a radius (2 r) in such a way that the diagonal of the hole is the radius of the disc .The C.G. of the section lies at [ ]
   A) Center of disc B) Center of hole C) Some where in the disc D) some where in the hole

6. Which of the following represents perpendicular axis theorem.(Generally) [ ]
   A) $I_x=I_y+I_z$ B) $I_z=I_x+I_y$ C) $I_y=I_z+I_x$ D) $I_z=I_x-I_y$

7. If first moment wrt any axis is zero,then the axis must be [ ]
   A) centroidal axis B) co-ordinate axis C) both a and b D) none of the above

8. Volumes of revolution is generated by revolving _____about fixed non intersecting axis [ ]
   A) line B) area C) volume D) none of the above

9. The truss in which members can not rotate freely at the joints is [ ]
   A) Plane Truss B) space truss C) Rigidly connected truss D) pin connected truss

10. Space truss is __ dimensional truss. [ ]
    A) 1 B) 2 C) 3 D) none of the above

Cont.....2

II Fill in the blanks

11. The C.G. of a uniform rod lies at its_____

12. The C.G. of a circle lies at its_____

13. When one or more component is a multi force member and all members are immovable, the structure is known as _____

14. Moment of inertia of circular section of diameter ‘d’ is _____

15. Moment of inertia of triangular section of base ‘b’ and height ‘h’ about an axis passing through its C.G. and parallel to the base is _____

16. Mass moment of inertia of a sphere about centroidal axis XX is_____

17. Moment of inertia of elliptical section of major axis ‘a’ and minor axis ‘b’ is___

18. The C.G. of hollow pyramid lies on the central axis above base at a distance of_____.

19. Radius of gyration of solid sphere of radius R is _____

20. Centroidal distance between centroid and centroidal axes is _____.

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Code No: A109100103 **Set No. 2**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

I B.Tech. II Mid Examinations, March – 2011

ENGINEERING MECHANICS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. Unit of mass moment of inertia is [ ]
   A) $Kg.m^2$ B) m^4 C) Kg.m D) none of the above

2. A circular hole of radius (r) is cut out from a circular disc of a radius (2 r) in such a way that the diagonal of the hole is the radius of the disc .The C.G. of the section lies at [ ]
   A) Center of disc B) Center of hole C) Some where in the disc D) some where in the hole

3. Which of the following represents perpendicular axis theorem.(Generally) [ ]
   A) $I_x=I_y+I_z$ B) $I_z=I_x+I_y$ C) $I_y=I_z+I_x$ D) $I_z=I_x-I_y$

4. If first moment wrt any axis is zero,then the axis must be [ ]
   A) centroidal axis B) co-ordinate axis C) both a and b D) none of the above

5. Volumes of revolution is generated by revolving _____about fixed non intersecting axis [ ]
   A) line B) area C) volume D) none of the above

6. The truss in which members can not rotate freely at the joints is [ ]
   A) Plane Truss B) space truss C) Rigidly connected truss D) pin connected truss

7. Space truss is __ dimensional truss. [ ]
   A) 1 B) 2 C) 3 D) none of the above

8. The C.G.of solid right circular cone lies on the axis at a height [ ]
   A) half of total height above base B) one third of total height above base
   C) one fourth of total height above base D) none of the above.

9. The point through which the whole weight of body acts is [ ]
   A) center of gravity B) area moment of inertia
   C) polar moment of inertia D) none of the above

10. Moment of inertia of triangular section of base b and height h about an axis passing through its vertex and parallel to the base is ___ times as that passing through its C.G. and parallel to the base. [ ]
    A) 2 B) 4 C) 8 D) 9

Cont.....2

II Fill in the blanks

11. Moment of inertia of circular section of diameter ‘d’ is _____

12. Moment of inertia of triangular section of base ‘b’ and height ‘h’ about an axis passing through its C.G. and parallel to the base is _____

13. Mass moment of inertia of a sphere about centroidal axis XX is_____

14. Moment of inertia of elliptical section of major axis ‘a’ and minor axis ‘b’ is___

15. The C.G. of hollow pyramid lies on the central axis above base at a distance of_____.

16. Radius of gyration of solid sphere of radius R is _____

17. Centroidal distance between centroid and centroidal axes is _____.

18. The C.G. of a uniform rod lies at its_____

19. The C.G. of a circle lies at its_____

20. When one or more component is a multi force member and all members are immovable, the structure is known as _____

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Code No: A109100103 **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

I B.Tech. II Mid Examinations, March – 2011

ENGINEERING MECHANICS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. Which of the following represents perpendicular axis theorem.(Generally) [ ]
   A) $I_x=I_y+I_z$ B) $I_z=I_x+I_y$ C) $I_y=I_z+I_x$ D) $I_z=I_x-I_y$

2. If first moment wrt any axis is zero,then the axis must be [ ]
   A) centroidal axis B) co-ordinate axis C) both a and b D) none of the above

3. Volumes of revolution is generated by revolving _____about fixed non intersecting axis [ ]
   A) line B) area C) volume D) none of the above

4. The truss in which members can not rotate freely at the joints is [ ]
   A) Plane Truss B) space truss C) Rigidly connected truss D) pin connected truss

5. Space truss is __ dimensional truss. [ ]
   A) 1 B) 2 C) 3 D) none of the above

6. The C.G.of solid right circular cone lies on the axis at a height [ ]
   A) half of total height above base B) one third of total height above base
   C) one fourth of total height above base D) none of the above.

7. The point through which the whole weight of body acts is [ ]
   A) center of gravity B) area moment of inertia
   C) polar moment of inertia D) none of the above

8. Moment of inertia of triangular section of base b and height h about an axis passing through its vertex and parallel to the base is ___ times as that passing through its C.G. and parallel to the base. [ ]
   A) 2 B) 4 C) 8 D) 9

9. Unit of mass moment of inertia is [ ]
   A) $Kg.m^2$ B) m^4 C) Kg.m D) none of the above

10. A circular hole of radius (r) is cut out from a circular disc of a radius (2 r) in such a way that the diagonal of the hole is the radius of the disc .The C.G. of the section lies at [ ]
    A) Center of disc B) Center of hole C) Some where in the disc D) some where in the hole

Cont.....2

II Fill in the blanks

11. Mass moment of inertia of a sphere about centroidal axis XX is_____

12. Moment of inertia of elliptical section of major axis ‘a’ and minor axis ‘b’ is___

13. The C.G. of hollow pyramid lies on the central axis above base at a distance of_____.

14. Radius of gyration of solid sphere of radius R is _____

15. Centroidal distance between centroid and centroidal axes is _____.

16. The C.G. of a uniform rod lies at its_____

17. The C.G. of a circle lies at its_____

18. When one or more component is a multi force member and all members are immovable, the structure is known as _____

19. Moment of inertia of circular section of diameter ‘d’ is _____

20. Moment of inertia of triangular section of base ‘b’ and height ‘h’ about an axis passing through its C.G. and parallel to the base is _____

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Code No: A109100103 **Set No. 4**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

I B.Tech. II Mid Examinations, March – 2011

ENGINEERING MECHANICS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. Volumes of revolution is generated by revolving _____about fixed non intersecting axis [ ]

   A) line B) area C) volume D) none of the above

2. The truss in which members can not rotate freely at the joints is [ ]

   A) Plane Truss B) space truss C) Rigidly connected truss D) pin connected truss

3. Space truss is __ dimensional truss. [ ]

   A) 1 B) 2 C) 3 D) none of the above

4. The C.G.of solid right circular cone lies on the axis at a height [ ]

   A) half of total height above base B) one third of total height above base
   C) one fourth of total height above base D) none of the above.

5. The point through which the whole weight of body acts is [ ]

   A) center of gravity B) area moment of inertia
   C) polar moment of inertia D) none of the above

6. Moment of inertia of triangular section of base b and height h about an axis passing through its vertex and parallel to the base is ___ times as that passing through its C.G. and parallel to the base. [ ]

   A) 2 B) 4 C) 8 D) 9

7. Unit of mass moment of inertia is [ ]

   A) $Kg.m^2$ B) m^4 C) Kg.m D) none of the above

8. A circular hole of radius (r) is cut out from a circular disc of a radius (2 r) in such a way that the diagonal of the hole is the radius of the disc .The C.G. of the section lies at [ ]

   A) Center of disc B) Center of hole C) Some where in the disc D) some where in the hole

9. Which of the following represents perpendicular axis theorem.(Generally) [ ]

   A) $I_x=I_y+I_z$ B) $I_z=I_x+I_y$ C) $I_y=I_z+I_x$ D) $I_z=I_x-I_y$

10. If first moment wrt any axis is zero,then the axis must be [ ]

    A) centroidal axis B) co-ordinate axis C) both a and b D) none of the above

Cont.....2

II Fill in the blanks

11. The C.G. of hollow pyramid lies on the central axis above base at a distance of_____.

12. Radius of gyration of solid sphere of radius R is _____

13. Centroidal distance between centroid and centroidal axes is _____.

14. The C.G. of a uniform rod lies at its_____

15. The C.G. of a circle lies at its_____

16. When one or more component is a multi force member and all members are immovable, the structure is known as _____

17. Moment of inertia of circular section of diameter ‘d’ is _____

18. Moment of inertia of triangular section of base ‘b’ and height ‘h’ about an axis passing through its C.G. and parallel to the base is _____

19. Mass moment of inertia of a sphere about centroidal axis XX is_____

20. Moment of inertia of elliptical section of major axis ‘a’ and minor axis ‘b’ is___

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