

# **ENGINEERING ACADEMY DEHRADUN**

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## MECHANICAL TEST PAPER

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1. A hollow shaft of same cross-section area as solid shafts transmits

- a) Same torque                      b) Less torque  
c) More torque                      d) Unpredictable

2. As the slenderness ratio of a column increase, its compressive strength

- a) Increases                          b) Decreases  
c) Remains unchanged              d) Unpredictable

3. The value of Poisson's ratio for any material cannot exceed

- a) 2.0                                  b) 1.414  
c) 1.0                                  d) 0.5

4. The stress at which a material fractures under large number of stress is called

- a) Creep                                b) Endurance  
c) Residual stress                      d) Ultimate strength

5. Belt drive is

- a) A positive drive  
b) Not a positive drive  
c) Used for small torque transmission  
d) None of these

6. The distance by which the outer edge of the D-slide valve overlaps the steam port in a steam engine, is known as

- a) Lead                                b) Exhaust lap  
c) Steam lap                          d) None of these

7. When a ship travels in a sea, which of the effect is more dangerous

- a) Steering                            b) Pitching  
c) Rolling                              d) All of these

8. Cam used for low and moderate speed engines should move with

- a) Uniform velocity                  b) Uniform acceleration  
c) Harmonic motion                  d) Cycloidal motion

9. The piston rod of a steam engine is usually connected by the head by means of

- a) Bolted joint                        b) Cotter joint  
c) Universal joint                      d) Knuckle joint

10. The metacentric height of ocean going vessels is usually of the order of

- a) 30 cm to 1.2m                      b) 1.8m to 2.0m  
c) 3m to 5m                            d) 5m to 7m

11. Head loss in turbulent flow in pipe varies directly as the

- a) Velocity  
b) Square of velocity  
c) Square root of velocity

d) Cube root of velocity

12. The viscosity of a fluid varies with

- a) Temperature and pressure      b) Temperature  
c) Pressure                            d) Density

13. The Exact analysis of viscous flow problem can be made by

- a) Euler's equation  
b) Continuity equation  
c) Navier-Stokes equation  
d) Hagen poiseuille's equation

14. Air vessel is used in reciprocating pumps to obtain

- a) Rise in delivery head  
b) Reduction of suction head  
c) Increase in supply of water  
d) Continuous supply of water at uniform rate

15. Steam in boiler drum is always

- a) Wet                                  b) Dry  
c) Superheated                        d) Both wet and dry

16. Thermodynamic efficiency of a steam turbine as compared to steam engine is

- a) Less                                  b) More  
c) Same                                 d) None of these

17. Actual power generated in engine cylinder, is known as

- a) Brake horse power  
b) Indicated horse power  
c) One boiler horse power  
d) Fractional horse power

18. Force are called concurrent when their line of action meet at

- a) One point                          b) Two point  
c) A plane                                d) Perpendicular planes

19. Force keeping the planets in a regular orbit is

- a) Electrostatic force                  b) Magnetic force  
c) Nuclear force                        d) Gravitational force

20. When co-efficient of restitution (e) is zero, the bodies are

- a) Inelastic                              b) Elastic to some extent  
c) Perfectly elastic                      d) Rigid

21. A hollow shaft of same cross-section area as solid shafts transmits

- a) Same torque                        b) Less torque  
c) More torque                         d) Unpredictable