Capital University of Science and Technology
Islamabad

Sample Admission Test for MS/PhD Mechanical Engineering Degree Programs

The Entry test for MS and PhD admissions in the department of Mechanical Engineering comprises of multiple choice questions (MCQs). The test has three sections:

1. Engineering
2. Quantitative and Analytical
3. English

The questions for the Engineering part of the entry testare designed from the following topics:

- Vector Mechanics for Engineers (Engineering Statics and Dynamics)
- Fluid Mechanics
- Thermodynamics
- Engineering Drawing
- Manufacturing processes

This portion of the test targets the fundamental concepts and necessary items related to Mechanical Engineering. The short multiple choice questions may involve some calculations of basic nature. A typical pattern and type of the test related to engineering subjects is provided here as sample. However during actual test candidates should expect variation of question distributions from each of the above mentioned courses.

Sample Questions

1. Pressure and temperature cannot be considered independent properties except when we have:
   a. Single phase
   b. Multi-phase
   c. Variable size of system
   d. Quasi-equilibrium process

   Correct Answer: a. Single phase.

2. For Newtonian fluid stresses are linearly related to:
   a. Acceleration
   b. Rate of strain
   c. Velocity
   d. Strain

   Correct Answer: b. Rate of strain

3. The force-couple system on an object can be finally reduced to a single resultant force only if which of the following relationships holds between the couple vector **M** and the resultant force **R** on the body.
   a. **M** is concurrent with **R**
   b. **M** is parallel to **R**
   c. **M** is collinear with **R**
   d. **M** is perpendicular to **R**

   Correct Answer: d. **M** is perpendicular to **R**

4. Linear momentum may be regarded as area under which of the following curves?
   a. s-t curve
   b. v-t curve
   c. F-t curve
   d. a-t curve

   Correct Answer: c. F-t curve

5. If line is inclined in both reference planes, its projection will show:
   a. True length
   b. True projection
   c. All of the above
   d. None of the above

   Correct Answer: d. None of the above

6. Which of the following statements define tolerance?
   a. Total permissible variation from a specified dimension
   b. Clearance between a shaft and a mating hole
   c. Measurement error
   d. Variation in manufacturing.

   Correct Answer: a. Total permissible variation from a specified dimension