

UNIT 2 – ACTIVITY 1 - MCQs

Which of the following is a definition for malleability?

- A. Ability to withstand compressive stresses
- B. Ability to withstand deformation under shear
- C. Property by which a material can be cold-worked
- D. Ability to undergo permanent deformation

Answer: C

When mild steel is subjected to a tensile load, its fracture will conform to?

- A. Star shape
- B. Granular shape
- C. Cup and cone shape
- D. Fibrous shape

Answer: C

When a wire is stretched to double in length, the longitudinal strain produced in it is?

- A. 0.5
- B. 1.0
- C. 1.5
- D. 2.0

Answer: B

Bulk modulus of elasticity is?

- A. Tensile stress/Tensile strain
- B. Shear stress/Shear strain
- C. Tensile stress/Shear strain
- D. Normal stress on each face of a cube/Volumetric strain

Answer: D

It is a weakness in materials, especially metals, caused by repeated variations of stress?

- A. Tensile weakness
- B. Compression
- C. Fatigue
- D. Cyclic porosity

Answer: C

Factor of safety is?

- A. Tensile stress/Permissible stress
- B. Compressive stress/Ultimate stress
- C. Ultimate stress/Permissible stress
- D. Ultimate stress/Shear stress

Answer: C

Poisson's ratio is?

- A. Lateral strain/Longitudinal strain
- B. Shear strain/Lateral strain
- C. Longitudinal strain/Lateral strain

D. Lateral strain/Volumetric strain

Answer: A

Which hardness test uses the steel ball as indenter?

- A. Rockwell C hardness test
- B. Brinell Hardness test
- C. Rockwell B hardness test
- D. Vickers hardness test

Answer: B

In which test, the specimen will be used in the form of the supported beam?

- A. Charpy Test
- B. Brinell Test
- C. Izod test
- D. Rockwell hardness test

Answer: C

Which of the following materials is most suitable for machining very hard and brittle material?

- A. Cast-cobalt alloy
- B. HSS
- C. Carbides
- D. None of the above

Answer: C

What is the scale range of the Mohs hardness test?

- A. 1 - 10
- B. 1 - 1000
- C. 100 - 200
- D. 1 – 3000

Answer: A

High-strength deformed steel bars with a yield stress of 500 MPa should have a minimum elongation of?

- A. 6 percent
- B. 8 percent
- C. 13.5 percent
- D. 20 percent

Answer: A

The ultimate tensile strength of high carbon steel in N/mm² can be?

- A. 600
- B. 1000
- C. 1500
- D. 2000

Answer: D

What is the ratio of Young's modulus of high tensile steel to that of mild steel?

- A. 0.5
- B. 1.0

C. 1.5

D. 2.0

Answer: B

Tungsten Steel can generally be used for manufacturing?

A. Drilling machines.

B. Heavy earth equipment.

C. Heavy mining equipment.

D. Delicate instrument.

Answer: A

With the increase of carbon content in steel, maximum stress will?

A. Increases

B. Decreases

C. Remains the same

D. None of the above

Answer: A

Which of the following kind of steel is used for manufacturing of rails?

A. Cast steel.

B. Bessemer steel.

C. Manganese steel.

D. Mild steel.

Answer: C

This test is required where the test piece must be tested at high or low temperatures?

A. Tensile strength test

B. CHARPY test

C. IZOD test

D. Compression test

Answer: B

Tensile Strain is?

A. Increase in length/original length

B. Decrease in length/original length

C. Change in volume/original volume

D. All of the above

Answer: A

Compressive Strain is?

A. Increase in length/original length

B. Decrease in length/original length

C. Change in volume/original volume

D. All of the above

Answer: B

Volumetric Strain is?

A. Increase in length/original length

- B. Decrease in length/original length
- C. Change in volume/original volume
- D. All of the above

Answer: C

TMR steels as compared to N-steels of the same grade has?

- A. Lower content of alloying elements but better strength
- B. Better weldability due to a lower carbon equivalent
- C. Lower cost
- D. All of the above

Answer: D

Dual Phase Steels have almost how many folds the strength of austenitic or ferritic stainless steels?

- A. Same
- B. Twice
- C. Three-folds
- D. Four-folds

Answer: B

Killed steel is characterized by?

- A. A high degree of chemical homogeneity and freedom from gas porosities
- B. Full de-oxidation before casting by the addition of silicon and aluminium resulting in better welding
- C. Their solidification not causing the formation of carbon monoxide
- D. All of the above

Answer: D

What is the interpretation for a steel designated 55CrV4?

- A. A low-alloyed steel with 0.55p of carbon, 4p of Chrome and traces of Vanadium
- B. A low-alloyed steel with 5.5p of carbon, 1p of Vanadium and traces of Chrome
- C. A high-alloyed steel with 55p of carbon, 1p of Chrome and traces of Vanadium
- D. A low-alloyed steel with 0.55p of carbon, 1p of Chrome and traces of Vanadium

Answer: D

What is the interpretation for a steel designated X5CrNiMo17-12?

- A. High alloy steel with 0.05p of carbon, 1.7p of Chrome, 1.2p of Nickel and traces of Molybdenum
- B. High alloy steel with 0.05p of carbon, 1p of Chrome, 17p of Nickel and 12p of Molybdenum
- C. High alloy steel with 0.05p of carbon, 17p of Chrome, 12p of Nickel and traces of Molybdenum
- D. High alloy steel with 5p of carbon, 17p of Chrome, 12p of Nickel and traces of Molybdenum

Answer: C

Steel designation which start with the letter S or E is?

- A. A non-alloy special steel
- B. A low alloy steel
- C. A high alloy steel
- D. A non-alloy quality steel

Answer: D

The meaning for a steel designation S355MC is?

- A. Structural steel, mechanical strength of 355 MPa, including nodular carbon
 - B. Structural steel, thermomechanically rolled, min. yield strength of 355 MPa, with medium carbon
 - C. Structural steel, thermomechanically rolled, min. yield strength of 355 MPa, suitable for cold forming
 - D. Structural steel, thermomechanically rolled, min. yield strength of 355 MPa, suitable for hot forming
- Answer: C