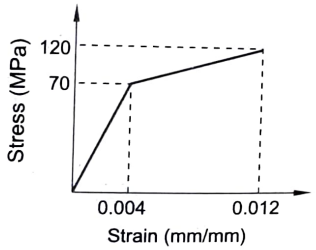
ce Questions

2. ENGINEERING MATERIALS

2.1 (S) The total area under stress-strain curve of mild steel specimen in simple tension test is a measure of [LO 1]
(a) ductility
(b) ultimate tensile strength
(c) stiffness
(d) toughness

2.2 (D) The stress-strain diagram of a specimen in simple tension test is shown in below given figure. The resilience and toughness of the material in Nm/m^3 are respectively [LO 1]



(a) 28×10^4 and 76×10^4
(b) 28×10^4 and 48×10^4
(c) 14×10^4 and 90×10^4
(d) 76×10^4 and 104×10^4

2.3 (S) Ability of the material to resist deformation due to stress is called [LO 1]
(a) toughness (b) stiffness
(c) plasticity (d) hardness

2.4 (S) Ability of a material to undergo large permanent deformation in tension is called [LO 1]
(a) toughness (b) stiffness
(c) plasticity (d) hardness

2.5 (S) Ability of the material to resist penetration by another material is called [LO 1]
(a) stiffness (b) ductility
(c) hardness (d) plasticity

2.6 (S) Property of the material to which it can be rolled or hammered into thin sheets is called [LO 1]
(a) brittleness (b) ductility
(c) malleability (d) toughness

2.7 (M) During normalizing process of steel, the component is heated [LO 6]
(a) between the upper and lower critical temperatures and cooled in still air.
(b) above the upper critical temperatures and cooled in furnace.
(c) above the upper critical temperatures and cooled in still air.
(d) between the upper and lower critical temperatures and cooled in furnace.

2.8 (S) Process of production of machine components having a soft ductile interior and very hard surface is called [LO 6]
(a) hardening (b) tempering
(c) case-hardening (d) annealing

2.9 (S) Process of adding carbon and nitrogen to increase surface hardness is called [LO 6]
(a) carburizing (b) cynading
(c) nitriding (d) hardening

2.10 (S) Process of introducing carbon to low carbon steel to get hard surface is called [LO 6]
(a) case-carburizing (b) cynading
(c) nitriding (d) flame-hardening

2.11 (S) Grey cast iron contains [LO 2]
(a) less than 0.3 % carbon
(b) 0.3 to 0.5 % carbon
(c) 0.5 to 1.4 % carbon
(d) 3 to 4 % carbon

2.12 (S) Mild steel contains [LO 4]
(a) less than 0.3 % carbon
(b) 0.3 to 0.5 % carbon
(c) 0.5 to 1.4 % carbon
(d) 3 to 4 % carbon

2.13 (S) Steels used for welded assemblies are [LO 4]
(a) medium carbon steel
(b) mild steel
(c) high carbon steel
(d) alloy steel

2.14 (S) Die cast parts are used when [LO 8]
(a) material of the parts has low melting point
(b) parts have small size
(c) parts are made on large scale
(d) all the above three objectives are desired

2.15 (S) Fibers used for fiber-reinforced-plastics are made of [LO 9]
(a) steel wires (b) hemp
(c) glass and carbon (d) asbestos

2.16 (S) Toughness of steel is increased by adding, [LO 4]
(a) nickel (b) chromium
(c) sulphur (d) tungsten

2.17 (S) Wear resistance of steel is increased by adding, [LO 4]
(a) nickel (b) chromium
(c) sulphur (d) none of the above

2.18 (S) In free cutting steels, important alloying element is [LO 4]
(a) nickel (b) chromium
(c) sulphur (d) tungsten

2.19 (S) A cast iron designated by FG300 is, [LO 2]
(a) grey cast iron with carbon content of 3%
(b) grey cast iron with ultimate tensile strength of 300 N/mm^2
(c) grey cast iron with ultimate compressive strength of 300 N/mm^2
(d) grey cast iron with tensile yield strength of 300 N/mm^2

2.20 (M) Plain carbon steel designated by 40C8 means, [LO 4]
(a) plain carbon steel with ultimate tensile strength of 400 N/mm^2 and 0.8% carbon
(b) plain carbon steel with 0.35 to 0.45% carbon and 0.7to 0.9% manganese
(c) plain carbon steel with 0.8% carbon and 4 % manganese
(d) plain carbon steel with 40% carbon and 8% manganese

2.21 (S) Thermosetting plastic is one, [LO 9]
(a) which softens when heated and hardens upon cooling
(b) which once having cured by chemical reaction, does not soften or melt upon subsequent heating
(c) which can be moulded and remoulded repeated
(d) which has linear polymer chain