TEST-4 (MECHANICAL)

Q.1 When a body is subjected to a direct tensile stress (σ) in one plane, then maximum normal stress occurs at a section inclined at……………….. to the normal of the section.

a) 0^0 　　　　　　b) 30^0

c) 45^0 　　　　　d) 90^0

Q.2 When a body is subjected to a direct tensile stress (σ), the maximum normal stress is equitation the direct tensile stress.

a) Agree 　　　　　b) Disagree

Q.3 A body is subjected to a direct tensile stress 9) in one plane. The shear stress is maximum a section inclined at……. To thermal of the section.

a) 45^0 & 90^0 　　b) 45^0 & 135^0

c) 60^0 & 150^0 　　d) 30^0 & 35^0

Q.4 Principle plane is a plane on which the shear stress is

a) zero 　　　b) minimum

c) maximum

Q.5 A body is subjected to a direct tensile stress of 300 MPa in one plane accompanied by a simple shear stress of 200 MPa. The maximum normal stress will be

a) -100 MPa 　　　b) 250MPa

c) 300MPa 　　　　d) 400MPa

Q.6 For the above question, the minimum normal stress will be

a) -100 MPa 　　　b) 250MPa

c) 300MPa 　　　　d) 400MPa

Q.7 For questions NO. 89, the maximum shear stress will be

a) -100MPa 　　　b) 250MPa

c) 300MPa 　　　　d) 400MPa

Q.8 A body is subjected to a tensile stress of 1200 MPa on one plane and another tensile stress of MPa on a plane at right angles to the former. It is also subjected to a shear stress of 400MPa on she same planes. The maximum normal stress will be

a) 400MPa 　　　b) 500MPa

c) 900MPa 　　　d) 1400MPa

Q.9 For the above questions, the minimum normal stress will be.

a) 400MPa 　　　b) 500MPa

c) 900MPa 　　　d) 1400MPa

Q.10 For question No. 95, the maximum shear stress will be

a) 400MPa 　　　b) 500MPa

c) 900MPa 　　　d) 1400MPa

Q.11 A body is subjected to two normal stresses $20kN/m^2$ (tensile) and $10kN/m^2$ (compressive) perpendicular to each other. The maximum shear stress is

a) $5kN/m^2$ 　　　b) $10kN/m^2$

c) 15kN/m^2 d) 20kN/m^2

Q.12   For biaxial stress, the planes of maximum shear are at right angles to each other and are inclined 4500 to the principal planes.

a) True   b) False

Q.13   The maximum shear stress is……. The algebraic difference of maximum and minimum normal stresses.

a) equal to   b) one-fourth

c) one-half   d) twice

Q.14   In Fig. 2.40, the tangential stress is given by

a) OC   b) OP

c) OQ   d) PQ

Q.15   In Fig. 2.40, the resultant stress is given by
a) OC   b) OP

c) OQ   d) PQ

Q.16   The radius o the Mohr's circle in.

a) sum of two principal stresses

b) difference of two principal stresses

c) half the sum of two principal stresses

d) half the difference of two principal stresses

Q.17   The maximum shear stress, in Fig. 2.40, is equal to ………. of the Mohr's circle.

a) radius   b) diameter

c) circumference   d) area

Q.18   Mohr's circle is used to determine the stresses on an oblique section of a body subjected

a) direct tensile stress in one plane accompanied by a shear stress

b) direct tensile stress in two mutually perpendicular directions

c) direct tensile stress in two mutually perpendicular directions accompanied by a simple shear stress

d) all of the above

Q.19   The extremities of any diameter on Mohr's circle represent

a) principal stresses

b) normal stresses on planes at 45^0

c) shear stresses on planes at 45^0

d) normal and shear stresses on a plane

Q.20   The maximum shear stress is equal to the radius of Mohr's circle.

a) Correct   b)Incorrect

Q.21   The energy stored in a body when strained within elastic limit is known as

a) resilience   b) proof resilience

c) strain energy   d) impact energy

Q.22   The total strain energy stored in a body termed as

a) resilience

b) proof resilience

c) impact energy

d) modulus of resilience

Q.23 The proof resilience is the maximum strain energy which can be stored in a body.

a) Yes   b) No

Q.24 The proof resilience per unit volume of a material is known as modulus of resilience.

a) True   b) False

Q.25 Strain energy is the

a) energy stored in a body when strained within elastic limits

b) energy stored in a body when strained upto the breaking of a specimen

c) maximum strain energy which can be stored in a body

d) proof resilience per unit volume of material

Q.26 The strain energy stored in a body, when suddenly loaded, is…….. The strain energy stored when same load is applied gradually.

a) equal to   b) one-half

c) twice   d) four times

Q.27 Resilience is the

a) energy stored in a body when strained within elastic limits

b) energy stored in a body when strained up to the breaking of the specimen

c) maximum strain energy which can be stored in a body.

d) None of the above

Q.28 The total strain energy stored in a body is called proof resilience.

a) Agree   b) Disagree

Q.29 Modulus of resilience is the proof resilience per unit volume of a material.

a) Correct   b) Incorrect

Q.30 The stress induced in a body, when suddenly loaded, is………….. the stress induced when the same load is applied gradually.

a) equal to   b) one-half

c) twice   d) four times

Q.31 The strain energy stored in a spring, when subjected to maximum load, without suffering permanent distortion, is known as

a) impact energy

b) proof resilience

c) proof stress

d) modulus of resilience

Q.32 The capacity of a strained body for doing work on to removal of the straining force, is called

a) Strain energy   b) resilience

c) Proof resilience   d) impact energy

Q.33 Which of the following statement is correct?

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a) The energy stored in a body, when strained within elastic limit is known as strain energy.

b) The maximum strain energy which can be stored in a body is termed as proof resilience.

c) The proof resilience per unit volume of material is known as modulus of resilience

d) all of the above

Q.34 A beam which is fixed at one end and free at the other is called

a) Simply supported beam

b) Fixed beam

c) Overhanging beam d) cantilever beam

Q.35 A beam supported at its both ends is not a simply supported beam.

a) True   b) False

Q.36 A beam extending beyond the supports is called

a) Simply supported beam

b) Fixed beam

b) Fixed beam

c) Overhanging beam

d) Cantilever beam

Q.37 A beam encastered at both the ends is called

a) Simply supported beam

b) Fixed beam

c) Cantilever beam

d) Continuous beam

Q.38 A beam supported on more than two supports is called

a) Simply supported beam

b) Fixed beam

c) Overhanging beam

d) Continuous beam

Q.39 A cantilever beam is one which is

a) Fixes at both ends

b) Fixed at one end free at the other end

c) Supported at its ends

d) Supported on more than two supports

Q.40 A simply supported beam is one which is supported on more than two supports.

a) True   b) False

Q.41 An overhanging beam must overhang on both sides.

a) Right   b) Wrong

Q.42 A fixed beam is one which is fixes at………. of its ends.

a) one   b) both

Q.43 A continuous beam is one which is

a) Fixed at both ends

b) Fixed at one end free at the other end

c) Supported on more than two supports

d) extending beyond the supports

Q.44 A concentrated load is one which

a) acts at a point on a beam

b) Spreads non-uniformly over the whole length of a beam

c) Spreads uniformly over the whole length of a beam

d) Varies uniformly over the whole length of a beam

Q.45 A load which acts at a point on a beam is not called uniformly distributed load.

a) Agree   b) Disagree

Q.46 A uniformly distributed load may be assumed to behave like a point load at the centre of gravity load for all sorts of calculations.

a) Right   b) Wrong

Q.47 A load which is spread over a beam in such a manner that it varies uniformly over the whole length of a beam is called uniformly ………. Load.

a) Distributed   b) varying

Q.48 The shear fore at a point on a beam is the algebraic……………. of all the forces on either side of the point.

a) sum σb) difference

Q.49 The bending moment at a point on a beam the algebraic…………… of the moments on either of the point.

a) sum   b) difference

Q.50 The bending moment on a section is maximum where shear force is

a) Minimum   b) maximum

c) Changing sign   d) zero