

Automobile MCQ

1. The magnitude of mechanical work is the
 - a. product of the force and distance travelled perpendicular to the force
 - b. product of the force and distance travelled parallel to the force
 - c. sum of the force and distance travelled perpendicular to the force
 - d. sum of the force and distance travelled parallel to the force
2. Work done by a system is taken to be
 - a. Positive
 - b. negative
 - c. zero
 - d. varies according to situation
3. Work done on a system is taken to be
 - a. positive
 - b. negative
 - c. zero
 - d. varies according to situation
4. The transfer of heat between two bodies in direct contact is called
 - a. radiation
 - b. convection
 - c. conduction
 - d. none of the mentioned
5. Work input is directly proportional to heat and the constant of proportionality is called
 - a. joule's equivalent
 - b. mechanical equivalent of heat
 - c. all of the mentioned
 - d. none of the mentioned
6. For an ideal gas, enthalpy becomes
 - a. $H=u-RT$
 - b. $H=-u-RT$
 - c. $H=u+RT$
 - d. $-u+RT$

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7. In a constant volume process, internal energy change is equal to
 - a. heat transferred
 - b. work done
 - c. zero
 - d. none of the mentioned

8. When a body A is in thermal equilibrium with a body B, and also separately with a body C, then B and C will be in thermal equilibrium with each other.
 - a. True
 - b. False

9. For a Rankine cycle, which of the following is true?
 - a. a reversible constant pressure heating process happens in steam boiler
 - b. reversible adiabatic expansion of steam in turbine
 - c. reversible constant pressure heat rejection in condenser
 - d. all of the mentioned

10. A small shear force is applied on an element and then removed. If the element regains its original position, what kind of an element can it be?
 - a. Solid
 - b. Liquid
 - c. Fluid
 - d. Gaseous

11. Which of the following machines have the possibility of cavitation?
 - a. Reaction turbines and centrifugal pumps
 - b. Reaction turbines and reciprocating pumps
 - c. Impulse turbines and centrifugal pumps
 - d. Impulse turbines and reciprocating pumps

12. The pressure at a point in the fluid is 4.9 N/cm^2 . Find height when the fluid under consideration is in oil of specific gravity of 0.85.
 - a. 5.83 m
 - b. 11.66 m
 - c. 17.49 m
 - d. 8.74 m

13. The Bernoulli's equation in fluid dynamics is valid for _____

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- a. Compressible flows
 - b. Transient flows
 - c. Continuous flows
 - d. Viscous flows
14. Which of the following is NOT a type of force considered in the Navier-Stokes equation?
- a. Gravity force
 - b. Pressure force
 - c. Surface tension force
 - d. Viscous force
15. Does total pressure takes into the account force exerted by the fluid when it is in the dynamic motion?
- a. Yes
 - b. No
 - c. Depends on the conditions
 - d. Depends on the type of Motion
16. Can centre of pressure for a vertical plane submerged surface be ever be above centre of Gravity
- a. Yes
 - b. No
 - c. It can be above in cases where the surface height is very large
 - d. None of the mentioned
17. Shear stress is caused due to _____
- a. Friction
 - b. Temperature
 - c. Pressure
 - d. Volume
18. Which of the following statement is true about vapor pressure of a liquid?
- a. Vapor pressure is closely related to molecular activity and temperature of the liquid
 - b. Vapor pressure is closely related to molecular activity but independent of the temperature of the liquid
 - c. Vapor pressure is not affected by molecular activity and temperature of the liquid
 - d. Vapor pressure is not affected by molecular activity and is independent of the temperature of the liquid

19. For cruising condition in automotive engines, the air-fuel mixture must be _____
- a. Lean
 - b. rich
 - c. chemically balanced
 - d. none of the mentioned
20. For high power condition in automotive engines, the air-fuel mixture must be _____
- a. lean
 - b. rich
 - c. chemically balanced
 - d. none of the mentioned
21. Diesel cycle is also known as _____
- a. constant volume cycle
 - b. constant pressure cycle
 - c. constant temperature cycle
 - d. none of the mentioned
22. The _____ sensor senses the temperature of the engine coolant, and from this data the computer adjusts the mixture strength to rich side for cold starting.
- a. engine temperature
 - b. exhaust gas
 - c. air flow
 - d. air inlet temperature
23. The _____ sensor, monitors mass or volume of air flowing into the intake manifold for adjusting the quantity of fuel.
- a. engine temperature
 - b. exhaust gas
 - c. air flow
 - d. air inlet temperature
24. The _____ sensor, checks the temperature of the ambient air entering the engine for fine tuning the mixture strength.
- a. engine temperature
 - b. exhaust gas
 - c. air flow

- d. air inlet temperature
25. Which law is also called as the elasticity law?
- a. Bernoulli's law
 - b. Stress law
 - c. Hooke's law
 - d. Poisson's law
26. The materials which have the same elastic properties in all directions are called _____
- a. Isotropic
 - b. Brittle
 - c. Homogeneous
 - d. Hard
27. A member which does not regain its original shape after removal of the load producing deformation is said _____
- a. Plastic
 - b. Elastic
 - c. Rigid
 - d. None of the mentioned
28. What is the factor of safety?
- a. The ratio of stress to strain
 - b. The ratio of permissible stress to the ultimate stress
 - c. The ratio of ultimate stress to the permissible stress
 - d. The ratio of longitudinal strain to stress
29. The law which states that within elastic limits strain produced is proportional to the stress producing it is known as _____
- a. Bernoulli's law
 - b. Hooke's law
 - c. Stress law
 - d. Poisson's law
30. Where in the stress-strain curve, the hooke's law is valid?
- a. Strain hardening region
 - b. Necking region

- c. Elastic range
 - d. Valid everywhere
31. What is the stress-strain curve?
- a. It is the percentage of stress and strain
 - b. It is the relationship between stress and strain
 - c. It is the difference between stress and strain
 - d. None of the mentioned
32. What is the bulk modulus of elasticity?
- a. The ratio of shear stress to shear strain
 - b. The ratio of direct stress to direct strain
 - c. The ratio of volumetric stress to volumetric strain
 - d. The ratio of direct stress to volumetric strain
33. The stress which acts in a direction perpendicular to the area is called _____
- a. Shear stress
 - b. Normal stress
 - c. Thermal stress
 - d. None of the mentioned
34. Which of these are types of normal stresses?
- a. Tensile and compressive stresses
 - b. Tensile and thermal stresses
 - c. Shear and bending
 - d. Compressive and plane stresses
35. The point at which the total area of a plane figure is assumed to be concentrated is called _____
- a. Centroid
 - b. Centre of gravity
 - c. Central point
 - d. Inertial point
36. Where will be the centre of gravity of a uniform rod lies?
- a. At its end
 - b. At its middle point
 - c. At its centre of its cross sectional area

- d. Depends upon its material
37. The axis about which moment of area is taken is known as _____
- a. Axis of area
 - b. Axis of moment
 - c. Axis of reference
 - d. Axis of rotation
38. Point, where the total volume of the body is assumed to be concentrated is _____
- a. Center of area
 - b. Centroid of volume
 - c. Centroid of mass
 - d. All of the mentioned
39. To avoid _____ stresses in beams, one end of the beam is placed on the rollers.
- a. Compressive
 - b. Pyro
 - c. Temperature
 - d. Tensile
40. _____ support develops support moment.
- a. Hinged
 - b. Simple
 - c. Fixed
 - d. Joint
41. In doubly reinforced beam, the maximum shear stress occurs _____
- a. along the centroid
 - b. along the neutral axis
 - c. on the planes between neutral axis and tensile reinforcement
 - d. on the planes between neutral axis and compressive reinforcement
42. A cylindrical section having no joint is known as _____
- a. Proof section
 - b. Seamless section
 - c. Target section
 - d. Mown section

43. A rod of length L and diameter D is subjected to a tensile load P . which of the following is sufficient to calculate the resulting change in diameter?
- Youngs modulus
 - Poissons ratio
 - Shear modulus
 - Both Youngs modulus and shear modulus
44. _____ number is the ratio between inertia and viscous forces.
- Lamina's
 - Parker's
 - Macadam's
 - Reynold's
45. The frictional resistance is _____ to the surface area of contact.
- Inversely proportional
 - Directly proportional
 - Equal
 - Not equal
46. _____ flow the liquid particles move along straight parallel paths.
- Steady
 - Unsteady
 - Laminar
 - Turbulent
47. A column in which reinforcement is wound spiral is _____
- Tied column
 - Spiral column
 - Composite column
 - Short column
48. The inclined members carrying compressive loads are _____
- Pedestal
 - Strut
 - Post
 - Winch

49. The transmission system transmits _____ from engine to wheels.
- Speed
 - Power
 - Current
 - Pressure
50. Which of the following is not a part of the transmission system?
- Clutch
 - Axles
 - Wheels
 - Gear box
51. The loads supported by an automobile frame are _____
- Weight of the body, passengers and cargo loads
 - Torque from engine and transmission
 - Sudden impacts from collisions
 - All of the mentioned
52. In a four stroke cycle engine camshaft revolves at _____ the crank speed.
- Two times
 - Half
 - Four times
 - Three times
53. The gears on camshaft and crankshaft are known as _____
- Lining gears
 - Aligning gears
 - Timing gears
 - Tuning gears
54. In which of the following fuel injector is used?
- Compression-ignition engines
 - Spark-ignition engines
 - Steam engines
 - Sterling engines

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55. At which stroke the fuel is injected in the CI engine?
- Suction stroke
 - Compression stroke
 - Expansion stroke
 - Exhaust stroke
56. Spark plug are mounted inside _____
- cylinder block
 - cylinder head
 - crank case
 - piston
57. Which of the following provides passages for flow of cooling water?
- cylinder block
 - cylinder head
 - crank case
 - piston
58. For retaining compression in the cylinder, a flat piece of _____ is placed between the cylinder head and cylinder block.
- Gasket
 - rims
 - cylinder liner
 - invar strut
59. Which of the following is not the effect of supercharging?
- Improved cold starting
 - Increased gas loading
 - Reduced exhaust smoke
 - Increased thermal loads
60. When the supercharger draws power from engine exhaust gases with the help of gas turbine, what is the supercharger called?
- Turbocharger
 - Vane type supercharger
 - Root's supercharger
 - Centrifugal type supercharger

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61. The pressure inside the lubrication system is controlled by _____
- Oil pump
 - Oil filter
 - Relief valve
 - Supply voltage
62. What is the need for crankcase ventilation?
- To cool cylinder
 - To cool crankcase
 - To cool piston
 - To remove blow-by
63. Why are the detergents used as oil additives?
- To increase fire point
 - To prevent foaming
 - To prevent sludge formation
 - To reduce viscosity
64. Which of the following is not considered while deciding the optimum firing order of the engine?
- Engine vibration
 - Engine cooling
 - Development of the backpressure
 - Engine configuration
65. Why is the Dwell meter used?
- To set the spark plug gap
 - To set the ignition advance
 - To set the contact breaker gap
 - To set ignition timing
66. Which of the following is the best method to measure the speed?
- Mechanical tachometer
 - Electrical tachometer
 - Magnetic pickup
 - Mechanical counters
67. Which of the following is the most accurate method of determining friction power?

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- a. Morse test
 - b. Willian's line
 - c. Motoring test
 - d. Measurement of brake and indicated power
68. What is the requirement of the air box in the airbox method of measuring airflow?
- a. To dump out the pulsation
 - b. To provide the constant velocity of flow
 - c. To have a constant flow
 - d. To have a constant temperature
69. Which of the following statements is not correct with respect to alcohols as alternate fuel?
- a. Anti-knock characteristics of alcohol are poor
 - b. Alcohol contains about half the heat energy of gasoline/liter
 - c. Alcohol does not vaporize as easily as gasoline
 - d. Alcohols are corrosive in nature
70. Why a small amount of gasoline is added to alcohol?
- a. To reduce the emission
 - b. To increase the power output
 - c. To increase the power efficiency
 - d. To improve cold-weather starting
71. Two door and four door type automobiles are classified as _____
- a. Sedan
 - b. Convertible
 - c. Special purpose vehicles
 - d. Pick ups
72. Which of these falls under LMV(Light Motor Vehicle) category based on capacity?
- a. Motorbikes
 - b. Cars
 - c. Buses
 - d. Trains
73. Most of the _____ vehicles have automatic transmission.
- a. Indian
 - b. Japanese

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- c. American
 - d. British
74. A delivery van falls under the category of which type of vehicles.
- a. Heavy passenger vehicles
 - b. Light passenger vehicles
 - c. Heavy goods vehicles
 - d. Light goods vehicles
75. Load per axle for a vehicle can be reduced by which of the following methods.
- a. By increasing distance between the axles
 - b. By increasing the number of tyres
 - c. By increasing the number of axles
 - d. By decreasing the length of an axle
76. The force that opposes the motion of a vehicle is _____
- a. Rolling resistance
 - b. Gradient resistance
 - c. Wind or air resistance
 - d. All of the mentioned
77. Rolling resistance doesnot depend on which of the following factors?
- a. Load on each road wheel
 - b. Radius of driving wheel
 - c. Wheel inflation pressure
 - d. Nature of road surface
78. For an average type of road surface what percentage of vehicle's weight constitutes rolling resistance?
- a. 5 to 10%
 - b. 1 to 2%
 - c. 2 to 5%
 - d. 0 to 3%
79. Wind or air resistance depends on which of the following factors?
- a. Shape and size of vehicle body

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- b. Air velocity
 - c. Speed of vehicle
 - d. All of the mentioned
80. The principle of compensating jet device is to make the mixture leaner as the throttle opens progressively.
- a. True
 - b. False
81. Which of the following is not the part of a carburetor?
- a. Float chamber
 - b. Choke and throttle
 - c. Fuel strainer
 - d. Auxiliary valve
82. In multiple venturi carburetors, the main jet discharges the fuel in a downward direction into the primary venturi against the upward air stream.
- a. True
 - b. False
83. Which of the following is the knock sensor?
- a. Flap type sensor
 - b. Thermocouples
 - c. Thermistors
 - d. Piezoelectric pickup
84. What is the use of the lambda sensors in the catalytic converter?
- a. To keep excess air ratio within a range
 - b. To keep the flow rate of constant air
 - c. To keep the exhaust pressure constant
 - d. To keep the exhaust temperature constant
85. Where are the electro-optical sensors used?
- a. Position and speed measurement
 - b. Piston temperature measurement
 - c. Cooling water flow measurement
 - d. Lubricating oil flow measurement

86. What is the main use of the strain gauge?
- a. To measure viscosity
 - b. To measure velocity
 - c. To measure temperature
 - d. To measure pressure
87. What is the use of the hot-wire sensor?
- a. To measure temperature
 - b. To measure the smoke intensity
 - c. To measure the mass flow rate
 - d. To measure pressure
88. Which of the following property is affected by heat treatment?
- a. Hardness
 - b. Strength
 - c. Ductility
 - d. All of the mentioned
89. Annealing involves heating the component to a temperature
- a. Slightly above the critical temperature
 - b. Equal to critical temperature
 - c. Slightly less than critical temperature
 - d. None of the mentioned
90. Which of the following is true?
- a. Rate of cooling in normalising is faster than in annealing
 - b. Annealing improves ductility
 - c. Normalising improves grain structure
 - d. All of the mentioned
91. Quenching
- a. Consists of heating the component to critical temperature
 - b. Cooling rapidly
 - c. Increases hardness

- d. All of the mentioned
92. Tempering involves
- a. Reheating the quenched component to a temperature greater than critical temperature
 - b. Increases the brittleness
 - c. Reheating the quenched component to a temperature equal to critical temperature
 - d. None of the mentioned
93. Beam strength of the bevel gear is independent of the cone distance.
- a. True
 - b. False
94. Beam strength indicates the maximum value of the _____ force at the large end of the tooth that the tooth can transmit without bending.
- a. Tangential
 - b. Radial
 - c. Axial
 - d. None of the listed
95. Wear strength of the bevel gear can be calculated by using _____ equation.
- a. Buckingham
 - b. Lewis
 - c. Newtonian
 - d. Rayleigh
96. A bottle opener belongs to which class of the levers.
- a. Effort in the middle
 - b. Fulcrum in the middle
 - c. Resistance in the middle
 - d. None of the mentioned
97. The wire rope is subjected to
- a. Tensile Stress
 - b. Bending Stress
 - c. Both bending and tensile stress
 - d. None of the listed

98. Which of the following are true for copper alloys
- Poses excellent thermal and electrical conductivity
 - Can be easily cast and machined
 - Has good corrosion resistance
 - All of the mentioned
99. Which of the following contain copper
- bronze
 - gunmetal
 - monel metal
 - each of the mentioned
100. Deep groove ball bearings creates a lot of noise.
- Yes
 - They create very less noise
 - Depends on the application
 - No reference frame for comparison is mentioned
101. There is problem of alignment in deep groove ball bearings.
- Yes
 - No, it is self-aligning
 - It aligns itself only in some particular cases
 - Can't be determined
102. The critical value at which crack extension occurs is called
- Stress Intensity Factor
 - Toughness
 - Fracture Toughness
 - None of the mentioned
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