

MECHANICAL ENGINEERING DEPARTMENT, GMIT, BHAVNAGAR.
MCQ QUESTION BANK - GTU

SUBJECT CODE: **2110006**

SUBJECT: **ELEMENTS OF MECHANICAL ENGINEERING**

1. Which of the following is not a unit of distance?
(a) Light year (b) Angstrom (c) Mile (d) Carat
2. The specific heat at constant pressure (C_p) of an ideal gas is
(a) Equal to its specific heat at constant pressure
(b) $C_p < C_v$ (c) $C_p > C_v$ (d) $C_p = 2 C_v$
3. The process of sublimation is found to occur in
(a) Liquid N_2 (b) Solid CO_2 (c) Solid O_2 (d) Air
4. If x_1 and x_2 are the dryness fractions obtained in separating calorimeter and throttling calorimeter respectively, then actual dryness fraction of steam is __
(a) $x_1 \cdot x_2$ (b) $x_1 + x_2 / 2$ (c) $x_1 + x_2$ (d) $x_1 - x_2$
5. The process of Carnot cycle are
(a) Two isothermal and two constant volume
(b) Two constant pressure and two constant volume
(c) Two isothermal and two isentropic
(d) Two isothermal and two adiabatic
6. A device which is used for pumping water into the boiler is called
(a) Economizer (b) Feed pump
(c) Injector (d) Air preheater
7. Which part used in I.C.Engine to convert reciprocating motion of piston to rotary motion of output shaft
(a) Connecting rod (b) Crank shaft (c) Cam shaft (d) Gudgeon pin
8. Which are of the following is not a rotary pump?
(a) Gear pump (b) Vane pump (c) Screw pump (d) Axial pump
9. Which one of the externally fired boiler.
(a) Babcock and Wilcox (b) Lancashire
(c) Cochran (d) All of the above
10. The chemical formula of R-12 is
(a) CCl_2F (b) $CClF_3$ (c) CCl_2F_2 (d) $CHClF_2$
11. Which types of coupling used to connecting shafts, whose axis are parallel but not in one line?
(a) muff coupling (b) flexible coupling (c) Oldham's coupling (d) flange coupling
12. Compressor in which compression of air from suction pressure to delivery pressure takes place in more than one cylinder is called _____ compressor.
(a) Single acting (b) Double acting
(c) Single stage (d) Multi stage
13. The ability of a material to resist fracture due to high impact loads is called
(a) strength (b) stiffness (c) toughness (d) brittleness

14. Which property is called Intensive property?
 (a) Kinetic energy (b) viscosity (c) Internal energy (d) magnetization
15. Work is considered positive when
 a) Work is done on the system b) work is done by the system
 c) both a and b d) none of the above
16. A source of energy is known as renewable source
 a) Fossil fuel b) Nuclear c) CNG d) All of the above
17. When driving and driven shafts are at comparatively larger distance apart, the type of drive suitable is :
 a) Gear drive b) Belt drive c) friction drive d) chain drive
18. The clutch ordinarily remains in disengaged condition when it is used for power transmission in:
 a) Automobile b) Machine tools c) Crane d) Elevator
19. Which of the following type of centrifugal pump converts kinetic energy of pump into pressure energy:
 a) Foot valve b) Casing c) Suction pipe d) Impeller
20. For earth moving machines, widely used engines are:
 a) Petrol engine b) Steam engine c) Diesel engine d) Gas engine
21. The correct location of economizer is :
 a) Between furnace and preheater b) between air preheater and chimney
 c) between forced draft fan and furnace d) near the superheater
22. COMPRESSOR is a machine which is used to do
 A) lift liquid from low height to higher elevation B) To store liquid
 C) To compress liquid OR gas. D) none of the above
23. Which of the following energy is converted into electricity in a Hydro power plant
 A) Nuclear energy B) Potential Energy of water
 C) Thermal Energy D) all of the above
24. Which of the following is a unit of Power.
 A) Joules B) Watt
 C) Meter D) kilogram
25. Which of the following instrument is used to measure temperature
 A) Vernier calliper B) Manometer
 C) Thermometer D) none of the above
26. In a simple gear train having two gears , if driving gear rotates in clockwise direction then driven gear rotates in
 A) Clockwise direction B) Anti clockwise direction
 C) Depend on size of gear D) depend on no. of teeth
27. In a IC engine from which of the following source energy is converted into mechanical energy
 A) Chemical energy of fuel. B) potential energy
 C) kinetic energy D) All of the above
28. Which of the following instrument is used for drawing curved lines
 A) T- Square B) French curves
 C) Protractor D) Compass
29. Water after being pumped into a boiler cannot come out because of
 a) Steam stop valve b) Feed check valve c) Safety valve d) Blow off valve

30. For the same compression ratio, the thermal efficiency of otto cycle is :
- Greater than Diesel engine
 - less than Diesel engine
 - equal to Diesel Engine
 - None of the above
31. Diesel cycle consists of :
- Two isentropic process and two isothermal process
 - two isentropic, one constant pressure, one constant volume process
 - two isothermal and two constant pressure process
 - two isentropic, Two constant volume process
32. Dryness fraction of a steam (x) is given by:
- m_s / m_w
 - m_w / m_s
 - $(m_s + 1) / m_w$
 - $m_s / (m_s + m_w)$
33. The material for making packing for covering steam pipes to avoid heat transfer, are made up of :
- Asbestos
 - Gold
 - Iron
 - Aluminum
34. The relation between C_p and C_v is:
- $C_p - C_v = R$
 - $C_v - C_p$
 - $C_p + C_v = R$
 - $C_p \cdot C_v$
35. Specific heat is defined as the amount required
- To raise unit degree of temperature of a substance
 - To raise unit mass of a substance through unit degree of temperature
 - To raise unit mass of a substance through 10°C
 - None of the above.
36. The unit of work is
- N.m
 - Joule
 - $\text{kg.m}^2/\text{s}^2$
 - all the above
37. The function of ozone layer is
- protects the earth from harmful effect of ultraviolet rays
 - increase the temperature of earth
 - increases CO_2 in atmosphere
 - none of the above
38. In the Polytropic Process $PV^n = C$, if $n = \infty$, the process is called
- isochoric
 - isobaric
 - isothermal
 - adiabatic
39. Saturation temperature of steam increase
- With decrease in pressure
 - with increase in pressure
 - is unaffected by pressure
 - none of the above
40. During adiabatic process
- heat transfer is zero
 - work transfer is zero
 - enthalpy remains constant
 - enthalpy change is zero.
41. The processes of Carnot cycle are
- Two adiabatic and two constant volume
 - Two constant pressure and two constant volume
 - Two isothermal and two adiabatic
 - Two isothermal and two isentropic
42. The air standard cycle on which the petrol engine work is
- Otto cycle
 - Carnot cycle
 - Joule cycle
 - Dual cycle
43. Pump is a machine which is used to do
- lift liquid from low height to higher elevation
 - To store liquid
 - To compress liquid
 - none of the above

44. which of the following energy is converted into electricity in a Hydro power plant
 A) Nuclear energy
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 C) Thermal Energy
 D) all of the above
45. which of the following is a unit of Electric current
 A) Ampere
 B) Volt
 C) Meter
 D) kilogram
46. Which of the following instrument is used to measure length
 A) Vernier calliper
 B) Manometer
 C) Thermometer
 D) none of the above
47. In a simple gear train having two gears , if driving gear rotates in clockwise direction then driven gear rotates in
 A) Clockwise direction
 B) Anti clockwise direction
 C) depend on size of gear
 D) depend on no. of teeth
48. In a IC engine which energy is converted into mechanical energy
 A) Chemical energy of fuel.
 B) potential energy
 C) kinetic energy
 D) All of the above
49. which of the following instrument is used for drawing a straight lines
 A) T- Square
 B) French curves
 C) Protractor
 D) Compass
50. Which of the following are boiler mountings?
 (a) Economiser (b) Fusible Plug (c) Super heater (d) Air preheater
51. The function of steam stop valve is
 (a) to regulate flow of steam from boiler to steam pipe
 (b) to separate steam from water
 (c) to collect steam from steam drum
 (d) to provide safety of boiler
52. Petrol engine is
 (a) Compression ignition engine (b) Spark ignition engine
 (c) mixed ignition engine (d) all of the above
53. Which of the following is a positive belt drive.
 (a) V-belt (b) flat belt (c) Cross belt (d) timing belt
54. A operation of filling passage ways with liquid from outside source before starting pumps is known as
 (a) cavitation (b) cleaning (c) priming (d) chocking
55. _____ is the ability of a material to resist deformation under stress.
 (a) strength (b) stiffness (c) hardness (d) brittleness
56. A one ton refrigeration system means that its refrigerating system is
 (a) 50 KJ/min (b) 210 KJ/min (c) 300 KJ/min (d) 350 KJ/min
57. Which of the following is not a unit of distance?
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