

SECTION – B

Mechanical Engineering

Max. Marks – 100

Roll No. (in figures) _____

Roll No. (in words) _____

Signature of the Candidate _____

Signature of Invigilator's 1. _____ 2. _____

Instruction for Candidates:

Attempt all 50 questions, each question carry 02 marks. There is no negative marking. Please mark the correct answer as A/B/C/D at appropriate place, on the right hand side of the question, in blue or black ink.

- Q.1** Stroke is the unit of
(A) surface tension (B) viscosity
(C) kinematic viscosity (D) none of the above []
- Q.2** The sum of internal energy and pressure volume product is called
(A) entropy (B) enthalpy
(C) heat supplied (D) none of above []
- Q.3** The maximum height reached by a stone of (weight 5 kgf), which is thrown vertically upward with an initial velocity 19.6 m/sec. would be
(A) 20.6 m (B) 19.6 m
(C) 30.6 m (D) 25.6 m []
- Q.4** Poise is the unit of
(A) mass density (B) kinematic viscosity
(C) viscosity (D) velocity gradient []
- Q.5** Atmospheric pressure head in terms of water column is
(A) 7.5 m (B) 8.5 m

- (C) 9.81 m (D) 10.3 m []
- Q.6** Manometer is a device used for measuring
 (A) velocity at a point in fluid (B) pressure at a point in fluid
 (C) discharge of a fluid (D) none of the above []
- Q.7** The rate of flow through a V-notch varies as
 (A) H (B)
 (C) $H^{3/2}$ (D) $H^{5/2}$ []
- Q.8** Rotameter is used for measuring
 (A) density of the fluid (B) velocity of fluids in pipes
 (C) discharge of fluids (D) viscosity of fluids []
- Q.9** Perfect gas obeys
 (A) boyles law only (B) clarles law only
 (C) boyles law and Charles law both (D) none of the above []
- Q.10** The compression ratio for diesel engine lie in the range of
 (A) 5 to 8 (B) 15 to 24
 (C) 3 to 6 (D) 12 to 15 []
- Q.11** The thermal efficiency of a two stroke cycle engine is compared to four stroke cycle engine is
 (A) more (B) equal
 (C) less (D) none of the above []
- Q.12** Unit of power is
 (A) watt (W) (B) joule (J)
 (C) jule-meter (JM) (D) none of the above []
- Q.13** A pelton turbine is
 (A) a reaction turbine (B) a radial flow turbine
 (C) an impulse turbine (D) none of the above []
- Q.14** In diesel engine, the suction consists of
 (A) air only (B) a mixture of air & diesel
 (C) diesel only (D) none of the above []
- Q.15** Bernoulli's theorem deals with the law of conservation of

- (A) mass (B) momentum
(C) energy (D) none of the above []
- Q.16** Air flow ratio theoretically for a petrol engine is approximately
(A) 25 : 1 (B) 20 : 1
(C) 15 : 1 (D) 10 : 1 []
- Q.17** The energy which is not derived from the Sun is
(A) bio mass (B) fossil fuels
(C) nuclear (D) geothermal energy []
- Q.18** The included angle for BSW threads is
(A) 49° (B) 45°
(C) 39° (D) 55° []
- Q.19** The material of which rivets are made, should be
(A) hard (B) malleable
(C) ductile (D) tough []
- Q.20** The melting point of cast iron is approximately
(A) 1200°C (B) 900°C
(C) 1000°C (D) 1500°C []
- Q.21** A turbine is a device, which converts
(A) hydraulic energy into mechanical energy (B) mechanical energy into hydraulic energy
(C) kinetic energy into mechanical energy (D) none of the above []
- Q.22** The main constituents of CNG is
(A) methane (B) butane
(C) ethane (D) propane []
- Q.23** The carbon content in cast iron is
(A) between 1.5-2.0 (B) between 3-4
(C) below 0.6% (D) between 0.6-1.5 []
- Q.24** Renewable Energy Includes
(A) Solar Energy (B) Wind Energy
(C) Geothermal Energy (D) Above all []

- Q.25** Density of air at normal pressure 20°C
- (A) 1.204 (B) 1.214
(C) 1.104 (D) 1.004 []
- Q.26** One horse power is
- (A) 746 watt (B) 750 watt
(C) 735 watt (D) 740 watt []
- Q.27** The domestic refrigerator has the co-efficient of performance
- (A) equal to 1.0 (B) less than 1.0
(C) more than 1.0 (D) any value []
- Q.28** Diesel oil is having cetane number about
- (A) 100 (B) 10
(C) 20 to 40 (D) 40 to 60 []
- Q.29** In simple harmonic motion, acceleration is proportional to
- (A) square of the velocity (B) velocity
(C) displacement (D) square of the displacement []
- Q.30** The lifting of the wheels from a rails and striking back on the rails take place at
- (A) low speed (B) high speed
(C) normal speed (D) none of the above []
- Q.31** Springs are used mainly
- (A) to store strain energy (B) to absorb shocks and vibrations
(C) to return an element to its original position (D) all of above []
- Q.32** The cutting tool in a milling machine is having
- (A) longitudinal motion (B) vertical motion
(C) rotational motion (D) all of above []
- Q.33** In case of a shaper, the surface cutting speed depends upon
- (A) metal to be machined (B) cutting tool material
(C) above both (D) none of above []
- Q.34** Which is the brain of the computer
- (A) ALU (B) CPU

- (C) control unit (D) memory unit []
- Q.35** Mechanical Engineering is the branch of engineering deals with
 (A) design of machine (B) fabrication of machine
 (C) repair & maintenance of machine (D) above all []
- Q.36** A dynamometer is a device use of measuring
 (A) speed of a machine (B) torque exerted by a machine
 (C) kinetic energy of a machine (D) all of the above []
- Q.37** Which of the following is a fire tube boiler
 (A) Lancashire boiler (B) Locomotive boiler
 (C) Cochran boiler (D) all of the above []
- Q.38** A cylindrical rod with both ends threaded is known as
 (A) bolt (B) stud
 (C) tap bolt (D) set screw []
- Q.39** Cracks are
 (A) line defects (B) point defects
 (C) surface defects (D) volume defects []
- Q.40** In tossing 10 coins, the probability of having exactly 10 coins is
 (A) $63/256$ (B) $63/64$
 (C) $63/128$ (D) none of these []
- Q.41** The cycle on which a gas engine works, is called
 (A) diesel cycle (B) otto cycle
 (C) dual cycle (D) none of the above []
- Q.42** In a concrete beam the steel bars are embedded
 (A) near top section (B) near bottom section
 (C) in the centre (D) any where []
- Q.43** Heat is absorbed by a refrigerant, during a refrigeration cycle in a
 (A) condenser (B) evaporator
 (C) compressor (D) throttle valve []
- Q.44** Two stroke petrol engine has
 (A) Valves (B) Ports

(C) Above both (D) None of them []

Q.45 TMT stands for

- (A) Thermo Mechanics Treatment (B) Thermo Mechanical Treatment
(C) Tandem Mass Tag (D) Thermo Mass Treatment []

Q.46 Which one of the following thread is not used for transmission of power

- (A) square thread (B) acme thread
(C) BSW thread (D) buttress thread []

Q.47 The absolute zero temperature corresponds to

- (A) 273°C (B) -273°C
(C) 0°C (D) -237°C []

Q.48 The fuel used in nuclear reactor is

- (A) Cadmium (B) Radium
(C) Uranium (D) Thorium []

Q.49 For one unit of electricity

- (A) a 100 watt bulb would lighter 10 hours (B) a fridge would work for 24 hours
(C) a TV set would work for 6 hours (D) above all []

Q.50 Which one of the following is a ferrous material

- (A) zine (B) iron
(C) silicon carbide (D) wood []