

SCCL - ASSISTANT FOREMAN (MECHANICAL)

SAMPLE / MODEL QUESTION PAPER

Questions : 150

Duration : 2 hours

General Instructions to candidates:

- 1) All questions carry equal marks.
- 2) No negative marks.
- 3) Answer all questions.
- 4) Every question has 4 options and only ONE is CORRECT Answer.
- 5) Use OMR sheet for marking the correct answer by bubbling with BLUE or BLACK ballpoint pen only.

1. Type of Key in Tapered Shafts is
 - 1) Feather Key
 - 2) Tangent key
 - 3) Woodruff Key
 - 4) any of them
2. Compression ratio of IC engines is
 - 1) The ratio of volumes of air in cylinder before compression stroke and after compression stroke
 - 2) Volume displaced by piston per stroke and clearance volume in cylinder
 - 3) Ratio of pressure after compression and before compression
 - 4) Swept Volume / Cylinder Volume
3. At very low temperature the melting and boiling temperature becomes equal. This temperature is
 - 1) 373° K
 - 2) 273.16° K
 - 3) 303° K
 - 4) 0° K
4. The property by virtue of which a liquid opposes relative motion between its different layers is called
 - 1) Surface Tension
 - 2) Co-efficient of viscosity
 - 3) Viscosity
 - 4) Osmosis
5. Twisting couple in a shaft introduces in it
 - 1) Bending Moment
 - 2) Deflection
 - 3) Shear Stress
 - 4) Shear Strain

6. A function of a washer is to
 - 1) Provide Cushioning effect
 - 2) Provide bearing area
 - 3) Absorb shocks and vibrations
 - 4) provide smooth surface in place of rough surface
7. Wire ropes are used for applications experiencing
 - 1) Low Speeds and Low tension
 - 2) Low speeds and High tension
 - 3) High speeds and low tension
 - 4) High speed and high tension
8. Casting process is preferred for parts having
 - 1) A few details
 - 2) Many Details
 - 3) No details
 - 4) Non-Symmetrical shape
9. The basic purpose of using a flywheel on rotating machinery is to
 - 1) Allow rapid acceleration
 - 2) Store and release energy as required
 - 3) Match output and input
 - 4) Balancing rotating parts
10. Which section is normally preferred for an eccentrically loaded strut
 - 1) Solid
 - 2) Hollow
 - 3) Composite
 - 4) Reinforced
11. The hoop stress developed in a thin walled cylindrical vessel is
 - 1) $pd/2t$
 - 2) $2pd/t$
 - 3) pd/t
 - 4) $2pd/3t$
12. Which steel will have maximum percentage of carbon
 - 1) C14
 - 2) 15 Cr 65
 - 3) 20 Cr 18 Ni 2
 - 4) 40 Cr 40
13. In instrumentation, a correction is
 - 1) An error
 - 2) Revision applied to the indicated value so that the final result improves the worth of the result
 - 3) Reading -Error
 - 4) Range of error-Degree of correctness

14. The property of a material necessary for forgings, in stamping images on coins and in ornamental work, is
- 1) elasticity
 - 2) plasticity
 - 3) ductility
 - 4) malleability
15. The property of a bearing material which has the ability to accommodate small particles of dust, grit etc. without scoring the material of the journal, is called
- 1) bondability
 - 2) embeddability
 - 3) conformability
 - 4) fatigue strength
16. The cap screws are
- 1) slotted for a screw driver and are generally used with a nut
 - 2) similar to tap bolts except IN Ssize and variety of shape Of head
 - 3) used to prevent relative motion between the two parts
 - 4) none of the above
17. The maximum flame temperature occurs
- 1) at the outer cone
 - 2) at the inner cone
 - 3) between the outer and inner cone
 - 4) at the torch tip
18. If the air-fuel mixture ignites before the spark takes place at spark plug, the condition is called detonation
- 1) Ignition
 - 2) pre-ignition
 - 3) rumble
19. The type of centrifugal pump preferred for a specific speed of 20 r.p.m. is
- 1) slow speed pump with radial flow at outlet
 - 2) medium speed pump with radial flow at outlet
 - 3) high speed pump with radial flow at outlet
 - 4) high speed pump with axial flow at outlet
20. A power plant giving least running cost of production of electrical power is
- 1) steam power plant
 - 2) gas turbine power plant
 - 3) hydro electric power plant
 - 4) nuclear power plant

21. The neutral axis of a transverse section of a beam passes through the centre of gravity of the section and is
- 1) in the vertical plane
 - 2) in the horizontal plane
 - 3) in the same plane in which the beam bends
 - 4) at right angle to the plane in which the beam bends
22. The shearing area of a key of length l , breadth b and depth h is equal to
- 1) $b \times h$
 - 2) $l \times h$
 - 3) $l \times b$
 - 4) $l \times b/2$
23. Fatigue life of small parts is improved by
- 1) drawing
 - 2) shot peening
 - 3) hobbing
 - 4) rolling
24. cutting tools are manufactured by
- 1) nickel steel
 - 2) silicon steel
 - 3) chrome steel
 - 4) high speed steel
25. Smelting in iron ore is the process of
- 1) Removing the impurities like clay, sand etc. by washing with water
 - 2) Expelling moisture, CO_2 , S and arsenic by heating in shallow kilns
 - 3) Reducing the ore with carbon in the presence of a flux
 - 4) All of the above
26. Creep in belt drive is due to
- 1) weak material of the belt
 - 2) weak material of the pulley
 - 3) uneven extensions and contractions of the belt while passing from TS to SS
 - 4) expansion of the belt
27. The power transmitted by a belt drive is maximum when the maximum tension in the belt is _____ the centrifugal tension.
- 1) equal to
 - 2) double
 - 3) three times
 - 4) six times
28. Which two forces are most important in floating bodies
- 1) Inertial, pressure
 - 2) Gravity, inertial
 - 3) Buoyancy, gravity
 - 4) viscous, buoyancy

29. The difference between the time available to do the job and the time required to do the job, is known as

- 1) Event
- 2) Float
- 3) Duration
- 4) Constraint

30. The Unit of Energy in SI Units is

- 1) Watt
- 2) Joule
- 3) Joule/Second
- 4) Joule / Meter