

QUESTION PAPER FOR WRITTEN EXAMINATION FOR POST OF
ASST. INSTRUCTOR GRADE- I (MECHANICAL) (EX-CADRE)
[GRADE PAY (GP) Rs.2800/- (VI PC) / LEVEL 5 (VII PC)] FOR
TECHNICAL TRAINING CENTRE, ICF

Date of Examination: 07-02-2018

Duration: 3 Hours
Maximum Marks: 100

Instructions to candidate:

- 1 Question paper consists of Section 'A' and Section 'B'
 - 2 Section 'A' consists of 25 Objective Type Questions which are compulsory. Each Objective Type Question carries 2 Marks. There is no Negative Mark for Wrong Answer to Objective Type Question. The Objective Type Questions have to be answered in Answer Sheet.
 - 3 Section 'B' contains Descriptive Type Questions. Each Question in Section 'B' carries 10 Marks. Any 5 Questions have to be attempted from Section 'B'. The Marks are indicated against each Question.
 - 4 The candidate is instructed not to leave any identification Mark/Sign in the Answer Booklet which may reveal his/her identity. Any distinguishing Mark(s) made by the Candidate on the Answer Booklet will render the Answer Booklet invalid for evaluation.
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Section 'A'

(25 x 2 Marks = 50 Marks)

1. _____ uses the movement of fluids to transfer heat.
(a) Conduction (b) Radiation (c) Convection (d) None of these

2. Which of the following material is more elastic?
(a) Rubber (b) Glass (c) Steel (d) Wood

3. SI Unit of Power is
(a) Watt (b) Joule (c) Kilogram (d) Dyne

4. Ductility is the property of metal which helps to manufacture ...
(a) wires (b) sheets (c) pipes (d) plates

5. Stainless steels are defined as having at least what percent chromium by mass?
(a) 7.5% (b) 10.5 % (c) 15.5% (d) 20.5%

6. Which of the following is a permanent fastening ?

- (a) Rivet (b) Cotter pin (c) Nut & bolt (d) Screw

7. The ratio of lateral strain to linear strain is called

- (a) Modulus of elasticity (b) Modulus of rigidity
(c) Poisson's ratio (d) Bulk modulus

8. What is the formula for the volume of a cone?

- (a) $\frac{2}{3} \pi r^2 h$ (b) $\pi r^2 h$ (c) $\frac{1}{3} \pi r^2 h$ (d) $2\pi r^2 h$

9. The fit between wheel & Axle is

- (a) Transition fit (b) Interference fit (c) Clearance fit (d) All the above

10. Loudness of noise is measured in

- (a) Richter (b) Tesla (c) Decibels (d) Hertz

11. In Unilateral system of tolerance, the tolerance is allowed on

- (a) both sides of the normal size (b) both sides of the actual size
(c) one side of the normal size (d) one side of the actual size

12. Expansion of FCAW _____

- (a) Flux Covered And Welding (b) Flux Cored Arc Welding
(c) Fused Covered Arc Welding (d) None of the above

13. To reduce internal stresses of a hardened tool, the method of heat treatment generally applied is

- (a) Stabilising (b) annealing (c) normalizing (d) tempering

14. _____ energy is the energy a body possesses because of its motion.

- (a) Potential energy (b) Kinetic energy (c) Thermal energy (d) Wind energy

15. _____ is one which has the effort between the fulcrum and the load.

- (a) Class 1 lever (b) Class 2 lever (c) Class 3 lever (d) None of the above

16. Which of the following is a renewable resources?

- (a) Coal (b) Petroleum (c) Natural Gas (d) Wind





17. Spot welding is an example of _____ welding.

- (a) Gas (b) Arc (c) Resistance (d) Tungsten Inert Gas

18. In drawing, the surface roughness is represented by

- (a) Circles (b) Squares (c) Triangles (d) Zig-Zag lines

19. Graphical representation of single bevel butt weld symbol is

- (a)  (b)  (c)  (d) 

20. Change in velocity of an object per unit time is called

- (a) Speed (b) Motion (c) Acceleration (d) None

21. The ratio of ultimate stress and working stress is called

- (a) Factor of safety (b) Working stress
(c) Proof stress (d) Ultimate stress

22. Which of the following welding process uses non-consumable electrodes?

- (a) TIG welding (b) MIG welding
(c) Manual arc welding (d) submerged arc welding

23. The included angle of a hexagon is

- (a) 30° (b) 60° (c) 120° (d) 150°

24. The top and right side views have common dimensions of

- (a) Height and width (b) width and depth (c) height (d) depth

25. The recommended method of dimensioning a sphere with diameter 80 mm

- (a) 80 \varnothing S (b) \varnothing 80S (c) S80 \varnothing (d) S \varnothing 80

Section 'B'

(5 X 10 Marks = 50 Marks)

1. What is Heat Treatment? What is the purpose of Heat Treatment? Differentiate between Annealing & Normalising.
2. What are the safety precautions and safety equipments to be used in your work place?
3. What are the Mechanical properties of Metal?
4. Write short notes on the following
 - (a) Fits and Tolerance
 - (b) Isometric View
5. What are the five basic types of welded joints? Give an example of each with a neat sketch?
6. Write short notes on the following
 - (a) IMS Policy
 - (b) Modulus of elasticity
7. (a) When is the Hindi day celebrated and why? (3 Marks)
 - (b) What are the various incentives given to a regular ICF employee on passing Prabodh, Praveen & Pragya Hindi exam? (7 Marks)
