

**QUESTION PAPER FOR WRITTEN EXAMINATION FOR POST OF
ASST. INSTRUCTOR GRADE- II (MECHANICAL) (EX-CADRE)
[GRADE PAY (GP) Rs.2400/- (VI PC) / LEVEL 4 (VII PC)] FOR
TECHNICAL TRAINING CENTRE, ICF**

Date of Examination: 07-02-2018

Duration: 3 Hours
Maximum Marks: 100

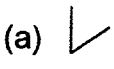

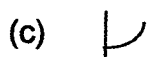

Instructions to candidate;

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. SI unit of work is
(a) Joule (b) Newton (C) Kilogram (d) None of the above
2. Density is
(a) Volume times mass (b). Mass times volume
(b) Volume divided by mass (d) Mass divided by volume
3. _____ is the transfer of heat through solids or stationery fluids.
(a) Conduction (b) Radiation (c) Convection (d) None of these
4. In the Quality System, IMS stands for
(a) Immediate Management System (b) Integrated Management System
(c) Incentive Management System (d) Important Monitoring System
5. What is the volume of a cylinder expressed in radius and height
(a) $\pi d^2 h$ (b) $\pi r^2 h$ (c) $2\pi r^2 h$ (d) $\pi d h$
6. A train 100 m long is running at the speed of 30 km/hr. Find the time taken by it to pass a man standing near the railway line.
(a) 18 sec (b) 12 sec (c) 5 minutes (6) 28 sec

7. A force of 250 newtons acted upon a body and the body has been moved through a distance of 15 metres. Calculate the work done.
- (a) 3750 joules (b) 235 Joules (c) 2350 Joules (d) None of the above
8. Pre-heating is essential in welding of
- (a) High speed steel (b) Stainless steel (c) Cast Iron (d) Aluminium
9. The property that allows the material to be hammered into thin sheet
- (a) Ductility (b) Malleability (c) Plasticity (d) None of the above
10. What does the term "quenching" refer to?
- (a) Heating metal to its melting point (b) Rapidly cooling a metal.
- (c) Galvanizing a metal (d) Adding another metal to create an alloy.
11. Heat treatment is done on Metals & Alloys in
- (a) Solid state (b) Liquid state (c) Gaseous state (d) None of these
12. Expansion of GMAW _____
- (a) General Machining And Welding (b) Gas Metal Arc Welding
- (c) Gas Motion Arc Welding (d) General Metal Arc Welding
13. One Horse Power is equal to _____
- (a) 836 watts (b) 746 watts (c) 700 watts (d) 726 watts
14. Least count of meter rule is
- (a) 1 mm (b) 0.1 mm (c) 10 mm (d) 0.5 mm
15. _____ is the energy, a body possesses because of its position.
- (a) Kinetic energy (b) Potential energy (c) Thermal energy (d) None of the above
16. Graphical representation of fillet weld symbol is
- (a)  (b)  (c)  (d) 
17. The best way of avoiding accident is by
- (a) Doing work in ancient way (b) Doing work in one's own way
- (c) Observing safety rules related to job, machine and workplace
- (d) Using safety equipment

18. Increase of carbon content in steel results in

- (a) Increase in hardness (b) increase in malleability
(c) Increase in ductility (d) increase in strength

19. The speed in a definite direction is called

- (a) elasticity (b) velocity (c) acceleration (d) None of the above

20. A lever that has the Load between the fulcrum and the effort is known as

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

21. The type of joint formed when the two pieces to be joined lie in parallel planes and their edges overlap is called?

- (a) Corner (b) T (c) Lap (d) Butt

22. The ability of a metal to absorb energy is called:

- (a) Strength (b) Ductility (c) Hardness (d) Toughness

23. When two angles together make 90° , they are called

- (a) obtuse angle (b) reflex angle
(c) complementary angles (d) supplementary angles

24. 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

25. The dimension figure for radius of a circle should be preceded by

- (a) R (b) CR (c) SR (d) RAD

Section 'B'

(5 X 10 Marks = 50 Marks)

1. What are the different processes of heat treatment? Describe any two of them in detail.
2. A Goat is tied with a rope of 2 meter length. Find the maximum area available for the goat to graze once tied in the green field.
3. List out any five PPEs used in your area and its advantages.
- 4 Explain the different types of fasteners with examples?
5. What is the difference between
 - (a) Hardness and brittleness
 - (b) Isometric view and orthographic view
6. Write short notes on (a) Arc welding (b) Butt seam welding
7. What are the States & Union territories coming under Region A (any five) and Region C (any five) for Rajbhasha implementation as per Official Language Rules.
