INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
भारतीय प्रौद्योगिकी संस्थान तिरुपति

G2 | Azadi Ka Amrit Mahotsav

Yerpedu – Venkatagiri Road, Yerpedu Post, Tirupati District, A.P – 517619

Examination for Non-Teaching Positions
Adv. No. IITT/STAFFREC/02/2023 dated 23.08.2023

Junior Technician – Central Workshop (welder)

Maximum Marks: 40   Time: 45 Minutes

Candidate Name	
Post Serial Number	
Signature of Invigilator	

General Instructions:

Please read the following instructions carefully:

1. This test booklet contains 40 questions. Each Question carries 1 mark. Each question comprises four answers. You will select the answers which you want to mark on the answer sheet.

2. You have to mark only one answer otherwise it will be counted as wrong answer.

3. Use blue/black ink ball point pen for darkening the circles on the OMR answer sheet only. Do not use Pencil.

4. Folding, wrinkling or putting any unwanted mark or damaging the OMR answer sheet is prohibited. The candidate will be responsible for invalidation of the OMR answer sheet by doing such deeds.

5. Any kind of electronic devices, including smart watches, mobiles, calculators, and/or any paper chits, letters or printouts are not allowed inside the examination hall.

6. You have to hand-over the answered OMR sheet and the test booklet to the invigilator after the examination.

--All the Best--

1. A square lamina in isometric projection appears as
   (a) Rhombus
   (b) Rectangle
   (c) Trapezium
   (d) Parallelogram

2. When a point is below H.P. and behind V.P., the point is resting in which quadrant?
   (a) 1st
   (b) 2nd
   (c) 3rd
   (d) 4th

3. The eccentricity of which of the following curve is greater than one?
   (a) Ellipse
   (b) Parabola
   (c) Hyperbola
   (d) None of above

4. In orthographic projection, the view showing the floor plan of the building is
   (a) Left-side view
   (b) Sectional view
   (c) Front view
   (d) Top view

5. The following symbol in drawing represents

   (a) perspective projection
   (b) third angle projection
   (c) first angle projection
   (d) oblique projection

6. Which of the oxy-fuel gas mixture is false?
   (a) Oxygen-Acetylene
   (b) Oxygen-Argon
   (c) Oxygen-Propylene
   (d) Oxygen-Hydrogen

7. The heat source used in brazing operation is
   (a) Oxygen-Acetylene flame
   (b) GTAW arc
   (c) GMAW arc
   (d) SAW arc

8. The current carrying capacity of the stick electrode in SMAW process increases with
   (a) Decrease in the electrode diameter
   (b) Increase in the electrode diameter
   (c) Increase in the covering flux thickness
   (d) Decrease in the covering flux thickness

9. In SMAW process, the weld pool is protected from the atmospheric contamination by the _____

   (a) Argon gas shielding
   (b) Gas covering from burned flux
   (c) Feeding of granular flux from the hopper
   (d) Argon and Helium gas mixture

10. Which of the below processes use inert gases as shielding gas
    (a) GTAW
    (b) GMAW
    (c) SAW
    (d) Both (a) and (b)

11. Preferable welding process to fabricate a two-wheeler chassis frame
    (a) GTAW
    (b) GMAW
    (c) SMAW
    (d) Laser welding

12. The preferred mode of the welding current in SMAW and GMAW processes is
    (a) DCEP
    (b) DCEN
    (c) AC
    (d) None of the above

13. The stick electrodes from the unpacked box are preferred to _____ before welding
    (a) Bake at elevated temperature
    (b) Mix with the additional flux
    (c) Exposed to Argon gas
    (d) None of the above

14. How the impurities in the weld pool are minimized in SAW process?
    (a) Flux covering
    (b) Slag-metal reaction in weld pool
    (c) Both (a) and (b)
    (d) None of the above

15. The weak region in a weld joint is
    (a) Weld region
    (b) Heat affected zone
    (c) Base material
    (d) Both (b) and (c)

16. The joints in the electronic boards are formed using
    (a) Brazing
    (b) Soldering
    (c) Arc welding
    (d) Resistance welding

17. Which of the following list of welding position is correct?
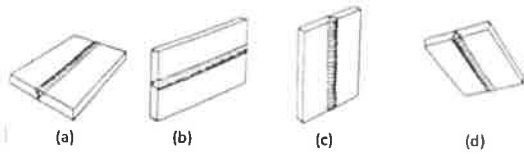
(a) a - 1G; b - 3G; c - 5G; d - 6G
(b) a - 1G; b - 6G; c - 2G; d - 4G
(c) a - 1G; b - 2G; c - 3G; d - 4G
(d) a - 2G; b - 3G; c - 4G; d - 6G

18. Welding porosity is formed due to
    (a) Improper cleaning of the workpiece
    (b) Improper selection of the process parameters
    (c) Improper selection of the shielding gas
    (d) All of the above

19. The following item is used to remove the slag from the surface of the weld bead
    (a) Chipping hammer and wire brush
    (b) Cutting plier
    (c) Flat file
    (d) Bare hand

20. The fine and invisible surface welding defects can be detected using
    (a) Die penetrant testing
    (b) Hammer testing
    (c) Varestraint test
    (d) Tensile test

21. The following is an internationally recognized and accepted unit system
    (a) MKS
    (b) FPS
    (c) SI
    (d) All of the above

22. _____ is equal to the difference of the two limits of the part
    (a) Tolerance
    (b) Low limit
    (c) High limit
    (d) Design size

23. Fitting of rim on a locomotive wheel is done by
    (a) Keying fit
    (b) Driving fit
    (c) Force fit
    (d) Any of the above

24. In a bilateral system of tolerance, the tolerance is allowed on
    (a) One side of the actual size
    (b) One side of the nominal size
    (c) Both sides of the actual size
    (d) Both sides of the nominal size

25. The accuracy of micrometers, calipers, dial indicators can be checked by a
    (a) Feeler gauge
    (b) Slip gauge
    (c) Ring gauge
    (d) Plug gauge

26. The algebraic difference between the minimum limit and the basic size is called
    (a) Actual deviation
    (b) Upper deviation
    (c) Lower deviation
    (d) Fundamental deviation

27. In manufacturing of hole and shaft, maximum shaft diameter was 49.88 mm and minimum hole diameter was found to be 49.94 mm. It is a
    (a) Clearance fit
    (b) Interference fit
    (c) Transition fit
    (d) None of the mentioned

28. How many gauge blocks are needed to build a dimension 28.835 mm from the following set.

    9 slips   1.001, 1.002, 1.003 ....1.009 mm

    9 slips   1.01, 1.02, 1.03.....................1.09 mm

    9 slips   1.1, 1.2, 1.3, ...1.9 mm

    25 slips 1, 2, 3,...............................25 mm

    3 slips   25, 50, 75 mm

    1 Slip of 1.0005 mm

    (a) 3
    (b) 4
    (c) 5
    (d) 6

29. Two shafts A and B have their diameters specified as 100 ± 0.1 mm and 0.1 ± 0.0001 mm respectively. Which of the following statements is/are true?
    (a) Tolerance in the dimension is greater in shaft A
    (b) The relative error in the dimension is greater in shaft A
    (c) Tolerance in the dimension is greater in shaft B
    (d) The relative error in the dimension is same for shaft A and shaft B

30. The fit on a hole-shaft system is specified as H7-s6. The type of fit is
    (a) Clearance fit
    (b) Running fit (sliding fit)
    (c) Push fit (transition fit)
    (d) Force fit (interference fit)

31. Faulty electrical equipment may cause
    (a) Fire hazards
    (b) Industrial accidents

(c) Loss of property

(d) All the above

32. Who is responsible for "unguarded moving parts?"
    (a) Workers
    (b) Management
    (c) Government
    (d) None

33. If affected worker is recovered within 10 hours then which type of accident is it ?
    (a) Minor
    (b) Reportable
    (c) Major
    (d) Fatal

34. How many ways should you have to get out of workshop in case of fire?
    (a) One safety way
    (b) At least two ways
    (c) Five ways
    (d) Mixed ways

35. Which of the following from the 5S technique means 'to clean the workplace, everything, without fail'?
    (a) Seiri
    (b) Seiton
    (c) Seiso
    (d) Seiketsu

36. The wt% C in low carbon steel is
    (a) Less than 0.30
    (b) Less than 0.35
    (c) Less than 0.38
    (d) None of the above

37. The yield strength of a metal is measured using
    (a) Toughness testing
    (b) Tensile testing
    (c) Fatigue testing
    (d) Corrosion testing

38. The hardness of medium carbon steel is decreased using
    (a) Quenching heat treatment
    (b) Annealing heat treatment
    (c) Shot peening
    (d) None of the above

39. Stainless steel has good
    (a) Corrosion resistance
    (b) Impact resistance
    (c) Thermal resistance
    (d) None of the above

40. Martensite structure is
    (a) Brittle
    (b) Ductile
    (c) Both (a) and (b)
    (d) None of the above