



J. C. Bose University of Science and Technology, YMCA, Faridabad

(formerly YMCA University of Science and Technology)

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SECTOR-6, FARIDABAD, HARYANA-121006

Question Booklet

Sr. No. **Q -**

Written Test for the post of **TECHNICIAN-FWSM** (Advt No.01/2023)

Applicant ID

Answer Sheet No.A-... ..

Name of Applicant: ..

Signature of the Candidate ...

Date of Examination: ...Sept. 09, 2023.....

Signature of the Invigilator(s)

1.

2.

Time: 2:00 hrs

Maximum Marks: 95

IMPORTANT INSTRUCTIONS

- i. The question paper is in the form of Test-Booklet containing 95 questions. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct.
- ii. On receipt of the Test-Booklet (Question Paper), the applicant must immediately check it and ensure that it contains all the pages, i.e., 95 questions. Discrepancy, if any, should be reported to the invigilator immediately after receiving the Test-Booklet.
- iii. The separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are separate rows containing four circles each. One row pertains to one question.
- iv. The candidate should write his/her details at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and NOWHERE ELSE.
- v. No second Test-Booklet/Question Paper and Answer-Sheet will be provided. The candidates are advised to be careful in handling it and marking the answer on the Answer-Sheet.
- vi. For every correct answer of the question **One (1) mark will be awarded**. For every un-attempted question, zero (0) mark shall be awarded. **There is NO Negative Marking** for wrong answers.
- vii. Marking shall be done only based on answers responded on the Answer-Sheet.
- viii. To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black ink pen.
- ix. For each question only **ONE** circle should be **DARKENED** as a mark of the answer adopted by the candidate. If more than one circle for the question(s) are found darkened, the question will be treated as cancelled.
- x. The candidate should not remove any paper from the Test-Booklet. Attempting to remove any paper shall be liable to be punished for use of unfair means.
- xi. Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.
- xii. *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*
- xiii. No candidate shall be permitted to leave the examination hall before the expiry of the time.

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

SECTION – A: GENERAL APTITUDE

UNIT – A: General Knowledge

1. What is the CAPITAL of Andhra Pradesh?
(a) Hyderabad, (b) Vishakhapatnam, (c) Amrawati, (d) Tirupati
2. What is the name of Vice President of India?
(a) Ramnath Kovind (b) Douopadi Murmu (c) Narendra Modi (d) Jagdeep Dhankhar
3. In which year the next FIFA world cup is expected to be hosted?
(a) 2026 (b) 2027 (c) 2025 (d) 2024
4. In which continent is Papua New Guinea situated?
(a) Asia (b) Australia (c) Africa (d) None of these
5. Who was the founder of Sunga Dynasty?
(a) Vasumitra, (b) Agnimitra, (c) Vajramitra (d) Pushyamitra
6. On which of the following rivers is Uri Dam located?
(a) Jhelum River, (b) Beas River, (c) Chenab River (d) Ravi River
7. The rate of interest at which the RBI lend to the banks in the country is known as:
(a) Repo rate, (b) Reverse repo rate, (c) Borrowing rate (d) None of these
8. Which of the following does not hold good for the public accounts committee?
(a) It has representatives from lok sabha and rajya sabha, (b) its members are elected by the parliament annually, (c) it was first setup in 1921 (d) It is entrusted with the accountability of public servants
9. Which of the following is the largest producer of latex?
(a) Kerala, (b) Tamil Nadu, (c) Jammu & Kashmir (d) Maharashtra

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- 10 Which of the following materials possesses highest density at room temperature?
(a) Iron, (b) Mercury, (c) Lead (d) Titanium
- 11 The Hydroponics is most closely related to which among the following?
(a) Water conservation, (b) Water desalination, (c) Grafting of Plants (d) Soilless culture of Plants
- 12 The Indian Standard Time (IST) zone is based on -----longitude.
(a) 73.26° , (b) 75.08° , (c) 112° (d) 82.5°
- 13 Which sport is also known as "Whiff-Whaff"?
(a) Table Tennis, (b) Tennis, (c) Taekwondo (d) Golf

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

UNIT – B: General English

- 14 Semantics is the study of _____
(a) Pronunciation, (b) Language, (c) phonetics, (d) Grammer
- 15 Identify from the following, the word with incorrect spelling.
(a) receive, (b) relieve, (c) eleminate (d) twelfth
- 16 Which of the following is another word for “snippet”?
(a) excerpt, (b) pawn, (c) hostage, (d) lackey
- 17 Choose the correct statement:
(a) My brother who lives in Delhi is a Professor, (b) My brother, who lives in Delhi, is a Professor, (c) My brother, who lives in Delhi is a Professor, (d) My brother who lives in Delhi, is a Professor
- 18 Change into passive: The salt-water corroded the metal beams. The metal beams _____ by the salt-water.
(a) was corroded, (b) corroded, (c) has corroded, (d) were corroded
- 19 Select the correct one from the following.
(a) a European, (b) an European, (c) an advice, (d) a hour
- 20 The English _____ English. (fill the blank with correct alternative given below)
(a) spoke, (b) speak, (c) spoken, (d) is spoken
- 21 Our armed forces are better _____ those of any other country in the world. (fill the blank with correct alternative given below)
(a) then, (b) from, (c) than (d) None of these
- 22 Pick the option which is the antonym for ‘vicious’.
(a) Passive, (b) Savage, (c) Merciless, (d) Cordial

QUESTION PAPER

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In each of the following questions four words are given, of which two words are most nearly the same or opposite in meaning. Find the two words which are most nearly the same or opposite in meaning and indicate the number of the correct letter combination.

A) Jeopardise, B) Sumptuous, C) Extravagant, D) Indigenous

(a) A-B, (b) B-C, (c) C-D, (d) D-E

24

Select the correct passive form of the given sentence.

Animals cannot make tools.

(a) Animals cannot be made by tools, (b) Tools cannot be made by animals, (c) Tools are not to be made by animals, (d) Tools could not be made by animals

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

UNIT – C: Reasoning and Analytical Ability

25 If “*” is called “+”, “/” is called “*”, “-” is called “/”, “+” is called “-”. $40/20 - 5 * 10 + 5 = ?$.

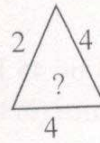
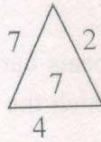
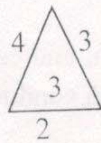
(a) 170, (b) 160, (c) 150, (d) None of these

26 Arrange the given words in the sequence in which they occur in the dictionary and choose the correct sequence.

1 Economic, 2 Earlier, 3 Each, 4 Edition, 5 Eager

(a) 3,4,1,5,2, (b) 2,1,3,5,4, (c) 3,2,4,1,5, (d) 3,5,2,1,4

27 Find the missing number.



(a) 5, (b) 8, (c) 4, (d) 2

28 Find the smallest number that leaves a remainder of 4 on division by 5, 5 on division by 6, 6 on division by 7, 7 on division by 8 and 8 on division by 9?

(a) 2519, (b) 5039, (c) 1079, (d) 979

29 LCM of 2 natural numbers p and q where $p > q$ is 935. What is the maximum possible sum of the digits of q ?

(a) 1, (b) 16, (c) 8, (d) 2

30 QPO, NML, KJI, _____, EDC.

(a) HGF, (b) CAB, (c) JKM, (d) GHD

31 If TOUR is coded as 1234, CLEAR is coded as 56784 and SPARE is coded as 90847, find the code for CARE

(a) 1247, (b) 4847, (c) 5247, (d) 5847

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

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Statement: Good is the enemy of best.

Conclusion-I: You should be good to your best enemy.

Conclusion-II: Best do not like the good.

(a) only conclusion I follows, (b) only conclusion II follows, (c) both I and II follow, (d) Neither I nor II follow

33

A swimming pool is of length 50 m. A and B enter a 300 m race starting simultaneously at one end of the pool at speeds of 3 m/s and 5 m/s. How many times will they meet while travelling in opposite directions before B completes the race?

(a) Twice, (b) Thrice, (c) Once, (d) five times

34

In a car race, car A beats car B by 45 km, car B beats car C by 50 km, and car A beats car C by 90 km. The distance (in km) over which the race has been conducted is:

(a) 550, (b) 475, (c) 450 (d) 500

35

Class B has 50% more students than class A. Number of girls in class A is equal to number of boys in class B. The percentage of girls is the same in both classes. What percentage of the student group are boys?

(a) 40%, (b) 33.33%, (c) 60%, (d) 25%

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

SECTION B: Subject related questions

- (36) A body under impending motion consists frictional forces
(a) zero, (b) limiting friction, (c) kinetic friction, (d) none of these
- (37) The angle of inclination of inclined plane when a body impends downward is called -----.
(a) angle of repose, (b) angle of static friction, (c) angle of cone of friction, (d) none of these
- (38) I screw jack has lead "L", mean radius "R" and pitch "p". Its lead angle "α" will be given by:
(a) $\tan\alpha = p/2\pi R$, (b) $\tan\alpha = R/2\pi L$, (c) $\tan\alpha = L/2\pi R$, (d) None of these
- (39) Centroid of a triangle from its base lies at:
(a) one third of its height, (b) two third of its height, (c) three fourth of its height, (d) one fourth of its height
- (40) In a curvilinear motion, it is assumed that all particles of the body travel with the same:
(a) displacement, (b) velocity, (c) acceleration, (d) all of these
- (41) Select a condition, from the following, in which the work done remain zero.
(a) if net force acting on the body is zero, (b) if the displacement lies perpendicular to the force, (c) if no displacement takes place in the direction of force, (d) all of these
- (42) Which of the following quantities does not affect the shear force diagram.
(a) uniformly distributed load, (b) couple, (c) uniformly varying load, (d) none of these

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (43) A beam whose one end is fixed and the other end is supported on roller is known as:
(a) simple supported beam, (b) cantilever beam, (c) propped beam, (d) overhanging beam
- (44) In a typical engineering stress and strain diagram which of the following properties can be obtained?
(a) yield stress, (b) strain hardening, (c) resilience, (d) all of these
- (45) The unit of viscosity is....
(a) N/m^3 , (b) $\text{N}\cdot\text{s}/\text{m}^3$, (c) $\text{N}\cdot\text{s}/\text{m}^2$, (d) $\text{N}/\text{s}\cdot\text{m}^2$
- (46) Select from the following the correct dimensions of force.
(a) $[\text{M L T}^{-1}]$, (b) $[\text{M L T}^{-2}]$, (c) $[\text{M L T}^{-3}]$, (d) $[\text{M L}^2 \text{T}^2]$
- (47) A pipe fitting with water flowing at a velocity 120 m/min and gauge pressure 3.5 bar over the pipe is located at 8 m above the datum line. The total head of water in m is:
(a) 44.88, (b) 45.88, (c) 43.88, (d) 42.88.
- (48) The ratio of throat diameter to inlet diameter of pipe for Venturi meter is most commonly kept as
(a) 1:1, (b) 1:2, (c) 1:3, (d) 2:1
- (49) The Darcy's friction factor for major loss is....
(a) Equal to coefficient of friction, (b) $2 \times$ coefficient of friction, (c) $3 \times$ coefficient of friction, (d) $4 \times$ coefficient of friction
- (50) The specific heat of water is....
(a) 1.817, (b) 2.521, (c) 4.187, (d) 2187

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (51) The principle of operation of the body temperature thermometer is based which of the following?
(a) Second law of thermodynamics, (b) Bernoulli's equation, (c) Zeroth law of thermodynamics (c) all of these
- (52) For constant pressure process, boundaries are...
(a) Finite, (b) Fixed, (c) Movable, (d) Infinite
- (53) If the value of compression ratio is the same, which of the following is correct for the efficiency of engine working on Otto cycle and diesel cycle.
(a) $\eta_{otto} > \eta_{diesel}$, (b) $\eta_{diesel} > \eta_{otto}$, (c) $\eta_{diesel} = \eta_{otto}$, (d) None of these
- (54) Compression ratio of spark ignition engines varies in the range:
(a) 4 to 6, (b) 6 to 12, (c) 12 to 20, (d) 20 to 25
- (55) The equilibrium conditions between supersaturated vapour and a cooled liquid surface are expressed in
(a) Napier's equation, (b) Clapcyron's equation, (c) Dalton's equation, (d) Kelvin Helmholtz equation
- (56) Which one of the following acts as ignition accelerator for C.I. engines fuel
(a) Acetone peroxide, (b) Hydrogen peroxide, (c) n heptane, (d) Aromatic compounds
- (57) The rate of heat flow across a 50 mm thick wall of material having thermal conductivity 40 W/m-°C for a temperature difference of 10°C will be
(a) 800 W/m²-hr, (b) 200 W/m²-hr, (c) 2000 W/m²-hr, (d) 8000 W/m²-hr
- (58) The value of Prandtl number for air is of the order of
(a) 0.7, (b) 9.7, (c) 0.065, (d) 67

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (59) The relation between the emissive and absorptive power of a surface is developed under
- (a) Kirchoff's law, (b) Planck's law, (c) Stefan-Boltzmann's law, (d) Planck's law
- (60) The chemical formula for Freon-12 is
- (a) CH_3CL , (b) CCl_2F_2 , (c) CClF_3 , (d) CHClF_2
- (61) The condition of refrigerant before and after the expansion or throttle valve in a vapour compression system is
- (a) Wet vapour, high pressure, saturated liquid, (b) High pressure saturated liquid, wet vapour, (c) Wet vapour, very wet vapour, (d) None of these
- (62) In a Psychrometric chart vertical lines indicate
- (a) Wet bulb temperature, (b) Dew point temperature, (c) Dry bulb temperature, (d) Relative humidity
- (63) Which of the following is true statement
- (a) Core-print is provided on the core, (b) Core-print is provided on the drag, (c) Splash-core is provided on the cope, (d) Runners's primary function is to help escape air and gases
- (64) The structure obtained after normalizing of steel is:
- (a) Coarse Pearlite, (b) Tempered Martensite, (c) Fine pearlite, (d) None of these
- (65) The Structure of Austenite is:
- (a) Close Packed Cubic, (b) Body Centred Cubic, (c) Body Centred Tetragonal, (d) Orthorhombic
- (66) Gas Tungsten Arc Welding is usually a
- (a) Semi-Automatic Welding, (b) Fully Automatic Process, (c) Manual Process, (d) None of the above

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (67) Which power source characteristic is suitable for Gas Metal Arc Welding
- (a) Constant current characteristics, (b) Constant voltage characteristics, (c) Drooping characteristic, (d) None of the above
- (68) Which of the following is a single point cutting tool:
- (a) Milling cutter, (b) Boring tool, (c) Twist drill, (d) Broach
- (69) The flux used in brazing is usually
- (a) Borax, (b) Alum, (c) Lime stone, (d) Calcium
- (70) Shanks of taper drills are provided standard taper known as
- (a) Chapman taper, (b) Brown and Sharpe taper, (c) Morse taper, (d) None of these
- (71) A plug gauge is used for measuring
- (a) distance between two external faces, (b) Tapered hole, (c) gap between two surfaces, (d) Cylindrical holes
- (72) In climb milling
- (a) Work moves in same direction as rotation of the cutter, (b) Work moves in opposite direction as rotation of the cutter, (c) Work is fed to cutter in lateral direction, (d) Tool climbs on the work piece for cutting operation
- (73) Which one of the following is not a part of micrometer
- (a) Spindle, (b) Thimble, (c) Anvil, (d) Beam
- (74) In a sine bar the standard length is measured from
- (a) Between the centers of two buttons, (b) Between inner circumference of two buttons, (c) Edge to edge, (d) None of these

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (75) The orthographic projections of a point are described as lying 20 mm below the HP and 25 mm in front of VP. This point lies in:
- (a) First Quadrant, (b) Second Quadrant, (c) Third Quadrant, (d) fourth Quadrant.
- (76) The term plan in orthographic projection refers to:
- (a) top view, (b) front view, (c) side view, (d) sectioned view.
- (77) When drawing isometric view of an object its horizontal edges are drawn along iso-axes which are inclined to horizontal at:
- (a) 15° , (b) 90° , (c) 30° , (d) 75° .
- (78) Vertical edges of an object appear in its isometric view as:
- (a) inclined at 30° clockwise, (b) Vertical, (c) inclined at 30° counter clockwise, (d) inclined at 15° .
- (79) Which of the following is unavoidable delay?
- (a) Non-availability of power, (b) Non-availability of inspection gauge, (c) Waiting for raw material, (d) All of these
- (80) Bin cards are used in
- (a) Quality control, (b) Preventive maintenance, (c) Stores, (d) None of these
- (81) The chart used to review the overall sequence of an operation by focusing either the movement of operators or materials is called
- (a) Flow process chart, (b) Gaunt chart, (c) Operation chart, (d) SIMO chart
- (82) A military organization is known as
- (a) Functional organization, (b) Line organization, (c) Line and staff organization, (d) None of these

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (83) Cyaniding is the process of
- (a) Adding carbon and nitrogen to increase hardness of core, (b) Adding carbon and nitrogen to increase hardness of specimen uniformly, (c) Adding carbon and nitrogen to increase hardness at the surface, (d) Solution treating the steel
- (84) Acrylonitrile Butadiene Styrene is a
- (a) thermoplastic polymer, (b) rubber, (c) thermosetting polymer, (d) elastomer
- (85) In a centre lathe gear box for changing spindle speeds the provision for speeds is made in
- (a) Arithmetical progression, (b) Fibonacci series, (c) Geometrical progression, (d) logarithmic series
- (86) A knee is a part of
- (a) Lathe, (b) Planer, (c) Milling machine, (d) broaching machine
- (87) Simple indexing using a dividing head of turn ratio 40 for 6 division would be
- (a) 14 holes in 21 hole circle plate, (b) 26 holes in 21 hole circle plate, (c) 6 turns and 14 holes in 30 hole circle plate, (d) 6 turns and holes in 21 hole circle plate
- (88) The included angle of a lathe centre is generally
- (a) 60° , (b) 90° , (c) 45° , (d) any of these
- (89) In case of annealing, the steel is heated to above upper critical temperature and subsequently:
- (a) air cooled, (b) oil cooled, (c) furnace cooled, (d) none of these
- (90) Which one of the following is not the trade name of tractor in India?
- (a) HMT, (b) Holland, (c) Escort, (d) Standard
- (91) Dilution of lubricating oil is most commonly caused by
- (a) Fuel, (b) Water, (c) Worn off particles, (d) Solid combustion residues

QUESTION PAPER

POST: Technician: Fabrication welding and Sheet metal

- (92) The device in the cooling system that increases the boiling point of the water in the system is called
- (a) Fins, (b) Radiator pressure cap, (c) Drain plug, (d) Vacuum valve
- (93) Which one of the following is not a part of the hydraulic braking system?
- (a) Wheel cylinder, (b) Master cylinder, (c) Brake pedal, (d) none of these
- (94) Driving wheel bearings in automobiles are always
- (a) Bush bearing, (b) Clad metal bearings, (c) Either (a) or (b),
(d) Anti-friction bearings
- (95) Clutch slippage while clutch is engaged is particularly noticeable
- (a) During acceleration, (b) During idling, (c) At low speed, (d) During braking

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

SECTION – A: GENERAL APTITUDE

UNIT – A: General Knowledge

1. (c) Amrawati
2. What is the name of Vice President of India?
(d) Jagdeep Dhankhar
3. (a) 2026
4. (b) Australia
5. (d) Pushyamitra
6. (a) Jhelum River
7. (a) Repo rate
8. (d) It is entrusted with the accountability of public servants
9. (a) Kerala
10. (b) Mercury
11. (d) Soilless culture of Plants
12. (d) 82.5°

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

13

(a) Table Tennis

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

UNIT – B: General English

- 14 (b) Language
- 15 (c) eliminate
- 16 (a) excerpt
- 17 (b) My brother, who lives in Delhi, is a Professor
- 18 (d) were corroded
- 19 (a) a European
- 20 (b) speak
- 21 (a) to
- 22 (d) Cordial
- 23 (b) B-C
- 24 (b) Tools cannot be made by animals

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

UNIT – C: Reasoning and Analytical Ability

- 25 (d) None of these
- 26 (d) 3,5,2,1,4
- 27 (c) 4
- 28 (a) 2519
- 29 (b) 16
- 30 (a) HGF
- 31 (d) 5847
- 32 (d) Neither I nor II follow
- 33 (b) Thrice
- 34 (c) 450
- 35 (a) 40%

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

SECTION B

- (36) (b) limiting friction
- (37) (a) angle of repose
- (38) (c)
- (39) (a) one third of its height
- (40) (d) all of these
- (41) (d) all of these
- (42) (b) couple
- (43) (c) propped beam
- (44) (d) all of these
- (45) (c) $\text{N}\cdot\text{s}/\text{m}^2$
- (46) (b) $[\text{M L T}^{-2}]$
- (47) (c) 43.88
- (48) (b) 1:2
- (49) (d) $4 \times$ coefficient of friction

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

- (50) (c) 4.187
- (51) (c) Zeroth law of thermodynamics
- (52) (c) Movable
- (53) (a)
- (54) (b) 6 to 12
- (55) (d) Kelvin Helmholtz equation
- (56) (a) Acetone peroxide
- (57) (d) 8000 W/m²-hr
- (58) (c) 0.065
- (59) (a) Kirchhoff's law
- (60) (b) CCl₂F₂
- (61) (b) High pressure saturated liquid, wet vapour
- (62) (c) Dry bulb temperature
- (63) (a) Core-print is provided on the core
- (64) (c) Fine pearlite

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

- (65) (a) Close Packed Cubic
- (66) (c) Manual Process
- (67) (b) Constant voltage characteristics
- (68) (b) Boring tool
- (69) (a) Borax
- (70) (c) Morse taper
- (71) (d) Cylindrical bores
- (72) (a) Work moves in same direction as rotation of the cutter
- (73) (d) Beam
- (74) (a) Between the centers of two buttons
- (75) (d) fourth Quadrant.
- (76) (a) top view
- (77) (c) 30°
- (78) (b) Vertical
- (79) (a) Non-availability of power

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

- (80) (c) Stores
- (81) (a) Flow process chart
- (82) (b) Line organization
- (83) (c) Adding carbon and nitrogen to increase hardness at the surface
- (84) (a) thermoplastic polymer
- (85) (c) Geometrical progression
- (86) (c) Milling machine
- (87) (d) 6 turns and holes in 21 hole circle plate
- (88) (a) 60°
- (89) (c) furnace cooled
- (90) (d) Standard
- (91) (a) Fuel
- (92) (b) Radiator pressure cap
- (93) (d) none of these
- (94) (d) Anti-friction bearings

ANSWERS

POST: Technician: Fabrication welding and Sheet metal

(95)

(a) During acceleration