BABA FARID UNIVERSITY OF HEALTH SCIENCES,FARIDKOT

Junior Engineer (Mechanical)

(under Baba Farid University of Health Sciences, Faridkot)

QUESTION BOC

THUMB IMPRESSION OF THE CANDIDATE

OMR ANSWER S

ROLL NO:

FULL SIGNATURE OF THE CANDIDATE

Co-ordinator stamp

FULL SIGNATURE OF INVIGILATOR

Time Allowed: 1:00 Hour (11:00 AM to 12:00 Noon) Maximum Marks: 50

1. Use BLACK FINE TIP BALL PEN only. Use of pencil is not allowed.
2. Write your Roll number on the OMR answer-sheet and also on the question-booklet only in the space provided for the purpose and at no other place in the question booklets and Answer-sheet
3. Enter the Question Booklet Set and Number on the OMR Answer-sheet and also darken the corresponding bubbles with BLACK FINE TIP BALL PEN.
4. Do not put any marks anywhere in the Question booklet /on the OMR Answer-sheet.
5. **There are 50 objective type questions in all of 1 Mark each.** Before attempting the questions, check that the Question-booklet is complete. In case any question/part of question or page is missing, inform the Centre Superintendent within 5 minutes of the start of the examination. After that no claim will be entertained.
6. **Each question is followed by four alternative responses listed as A), B), C) and D) out of which only one is correct / most correct. In case, all the ovals are left blank, there will be deduction of marks @ 0.25 mark for each such unattempted question. Fifth oval 'E' (introduced for security purpose) is to be darkened in case you do not want to attempt the question to avoid negative marking.**
7. To open the question booklet, remove the seal gently when asked to do so. Handover the OMR Answer-sheet to the officer on duty on the completion of the time before you leave the examination hall.
8. **The candidates are permitted to carry his/her question booklet after completion of the examination but OMR Sheets are compulsory required to be deposited with the invigilator.**
9. A candidate who create disturbance of any kind or changes his/her seat or is found in possession of any paper possibility of any assistance to him/her or unfair means will be expelled from the examination by the Centre superintendent/Observer, whose decision shall be final. ("Expulsion" for this purpose would mean cancellation of the entire examination of the candidate).
10. THE CANDIDATES ARE NOT PERMITTED TO CARRY ANY TELECOMMUNICATIION EQUIPMENT SUCH AS WATCH, CELLULAR PHONE, WIRELESS SET, SCANNER ETC. INSIDE THE EXAMINATION HALL.
11. For rough work, use only the blank space of the Question booklet.
12. The candidates will not be allowed to leave the examination hall during the examination.
13. Borrowing any material is not allowed.
14. The answer-sheet is designed for Computer evaluation. If the instructions are not followed properly, the candidate alone shall be responsible for the resultant loss.
15. Smoking/Refreshment shall not be allowed in the Entrance Test Centre/Hall.
16. Male candidates shall affix their Left Thumb Impression (LTI) while Female candidates shall affix Right Thumb Impression (RTI) at the prescribed place on the OMR answer sheet, Question Booklet and attendance sheet. The Centre superintendent shall also obtain and retain it for record.
17. The candidate must fill both the question booklet number and OMR answer sheet number on the attendance sheet.
18. No candidate shall be allowed to leave the centre before **12:00 Noon**.

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1. A crane lifts a mass of 100 kg to a height of 10 m in 20 sec. The power of the crane is
(a) 200W (b) 300W (c) 350W (d) 500W

2. Which one of the following welding techniques doesn't require pressure?
(a) Thermit welding (b) Arc welding (c) Resistance welding (d) Forge Welding

3. Eutectic reaction occurs at
(a) 1333^0F (b) 2065^0F (c) 1147^0F (d) 1493^0F

4. Maximum percentage of carbon in hyper-eutectoid steel is
(a) 4.3 % (b) 2% (c) 6.67% (d) 0.83%

5. The composite of austenite and cementite is called...
(a) Martensite (b) ferrite (c) ladeburite (d) Banite

6. Which parameter remain constant during a reversible adiabatic process
(a) Rate of heating (b) internal energy (c) enthalpy (d) entropy

7. In grinding operation, for grinding soft material
(a) coarse grain size is used (b) fine grain size is used
(c) medium grain size is used (d) any grain size is used

8. The maximum bending moment in cantilever of length L loaded by point load W at free end is given by
(a) WL (b) WL/2 (c) WL/4 (d) WL/8

9. Time dependent recoverable deformation under load is called ..
(a) Elastic deformation (b) Anelastic deformation
(c) Elastic after-effect (d) Visco-elastic deformation

10. If a material expands freely due to heating, it will develop
(a) Thermal stress (b) Tensile stress (c) No stress (d) Compressive stress

11. A pelton wheel is
(a) axial flow impulse turbine (b) radial flow impulse turbine
(c) outward flow impulse turbine (d) inward flow impulse turbine

12. Engineering stress-strain curve and True stress-strain curve are equal up to
(a) Proportional limit (b) Elastic limit (c) Yeild point (d) Tensile strength point

13. 100 calories of heat is equivalent to the following work
(a) 418ergs (b) 418 joules (c) 418W (d) 418 dynes

14. A mass of 1kg is attached to the end of a spring with stiffness 0.7 N/mm. The critical damping coefficient of this system is
(a) 1.4 Ns/m (b) 18.5Ns/m (c) 52.9Ns/m (d) 87.5Ns/m

15. A thin cylinder of inner radius 500mm and thickness 10mm is subjected to an internal pressure of 5MPa. The average circumferential (hoop) stress in MPa is
(a) 100 (b) 250 (c) 500 (d) 1000

16. Which of the following parameter remains constant during superheating of the steam?
(a) pressure (b) temperature (c) enthalpy (d) internal energy

17. Two identical ball bearings P and Q are operating at loads 30kN and 45kN respectively. The ratio of the life of bearing P to the life of bearing Q is
(a) 81/16 (b) 27/8 (c) 9/4 (d) 3/2

18. The shear strength of a sheet metal is 300MPa. The blanking force required to produce a blank of 100mm diameter from a 1.5 mm thick sheet is close to
(a) 45kN (b) 70kN (c) 141kN (d) 3500kN

19. The crank radius of a single–cylinder I. C. engine is 30mm and the diameter of the cylinder is 80mm. The swept volume of the cylinder in cm is
(a) 48 (b) 96 (c) 150 (d) 301

20. A stationary object of 10 kg mass is acted upon by 20N force for 5seconds. The object will attain the final velocity of
(a) 10 m/s (b) 20 m/s (c) 30m/s (d) 40 m/s

21. The radius of gyration of a circular area of radius R w.r.t. centroidal axis is
(a) R (b) 0.5R (c) 0.2R (d) 0.1R

22. Area under the stress-strain curve represents
(a) toughness of the material (b) hardness of the material
(c) Breaking strength of the material (d) UTS of the material

23. A closed coil helical spring is cut into two equal parts. The stiffness of each resulting spring as compared to the original spring will be
(a) one forth (b) half (c) same (d) double

24. A universal joint is an example of
(a) lower pair (b) higher pair (c) sliding pair (d) rolling pair

25. Density of water is maximum at
(a) 0^0C (b) 4^0C (c) 10^0C (d) 100^0C

26 The circular pitch of a toothed wheel having 24 teeth and a module of 4.25mm will be equal to
(a) 1.35mm (b) 4.25mm (c) 6.67mm (d) 13.35mm

27. In an experiment to determine the dryness fraction of steam, 0.25 kg of water was retained by a separating calorimeter in 10 minutes and 2.25 kg of steam was passed out in the same time. The dryness fraction of steam would be about
(a) 0.9 (b) 0.8 (c) 0.6 (d) 0.7

28. The crystal structure of α-iron is
(a) FCC (b) CPH (c) BCC (d) simple cubic

29. Maximum surface hardness is attained by
(a) cyaniding (b) carburising (c) flame hardning (d) nitriding

30. Addition of sulfur to steel increase its
(a) hardness (b) machinability (c) weldability (d) castability

31. Die for wire drawing are made of
(a) Cast Iron (b) wrought iron (c) mild steel (d) carbides

32. The strength of the tool are essentially depends upon
(a) lip angle (b) rake angle (c) cutting angle (d) relief angle

33. If the lead angle of a worm is 22.5 deg, then its helix angle will be
(a) 22.5 (b) 45 (c) 67.5 (d) 90

34. If $\omega/\omega_n = \sqrt{2}$, where ω is the frequency of excitation and ω_n is the natural frequency of vibrations, then the transmissibility of vibration will be
(a) 0.5 (b) 1 (c) 1.5 (d) 2

35. The selection of tool material in EDM is based on its having
(a) high resistance (b) poor thermal conductivity
(c) low melting point (d) high electro-erosive strength

36. Expansion of hot gases in an IC engine can be approximated to an
(a) adiabatic process (b) isothermal process
(c) isobaric process (d) isochoric process

37. For heat engine operating on carnot cycle, the work output is $1/4^{th}$ of the heat rejected to the sink. The thermal efficiency of the engine is
(a) 10% (b) 20% (c) 30% (d) 40%

38. The ignition temperature of diesel fuel is about
(a) 280^0C (b) 210^0C (c) 350^0C (d) 400^0C

39. If an ideal gas at 27 ^{0}C is compressed suddenly to one fourth of its initial volume, then rise in its temperature is (Υ = 1.4)
(a) 222.23 K (b) 233.33K (c) 244.33K (d) 255.33K

40. If the temperature of a hot body is increased by 50%, the amount of radiation emitted by it would increase by nearly

(a) 50% (b) 100% (c) 300% (d) 400%

41. When the dry bulb and wet bulb temperature are same, then relative humidity of air will be

(a) 60% (b) 70% (c) 90% (d) 100%

42. The important mechanical property of a material for extrusion process is

(a) brittleness (b) ductility (c) plasticity (d) elasticity

43. If the coefficient of performance of a refrigerator is 5 and operates at the room temperature 27 ^{0}C, the temperature inside the refrigerator is

(a) 240 K (b) 250 K (c) 230 K (d) 260 K

44. Two solid shafts are made of same material and having their diameters D and D/2. The ratio of strength of the bigger shaft to smaller shaft is torsion is

(a) 4 (b) 2 (c) 8 (d) 16

45. The square of standard deviation is also called

(a) skewness (b) variance (c) medium (d) mode

46. Air standard efficiency of a diesel cycle is depends upon

(a) ratio of specific heats (b) cut off ratio (c) adiabatic compression ratio (d) all of these

47. The maximum temperature in the IC engine cylinder is of the order of

(a) 500-1000^{0}C (b) 1000-1500^{0}C (c) 1500-2000^{0}C (d) 2000-2500^{0}C

48. A cyclist bends while taking turn to

(a) reduce friction (b) reduce speed
(c) generate required centrifugal force (d) reduce apparent weight

49. In testing a material for endurance strength, it is subjetct to

(a) static loading (b) dynamic loading
(c) static and dynamic loading (d) repeated load

50. A jet engine work on the principle of conservation of

(a) mass (b) energy (c) flow (d) liner momentum

ANSWER KEY			
Recruitment test conducted on 22/05/2025 for post of Junior Engnieer Mechanical under BFUHS, Faridkot			
1	D	26	D
2	B	27	A
3	B	28	C
4	B	29	D
5	C	30	B
6	D	31	D
7	A	32	B
8	A	33	C
9	B	34	B
10	C	35	D
11	A	36	A
12	B	37	B
13	B	38	B
14	C	39	A
15	B	40	D
16	A	41	D
17	B	42	C
18	C	43	B
19	D	44	C
20	A	45	B
21	B	46	D
22	A	47	D
23	D	48	C
24	A	49	D
25	B	50	D