Question Booklet No.	001081

Skill Development and Entrepreneurship Department
Directorate of Vocational Education and Training
Directorate of Skill Development, Employment and Entrepreneurship
Question Paper Group Name: INSTRUMENTATION
Question Paper Post Names: Craft Instructor – Instrument Mechanic

Duration: 60 Minutes | Total Questions: 40

INSTRUCTIONS

1. This Question Paper Booklet contents 40 mandatory questions. Candidate should check the Question Paper Booklet and ensure that it contents all pages and questions before starting to answer. If candidate finds any problem pertaining to printing/ binding/ incomplete pages etc, candidate should immediately get the Question Paper replaced from the Invigilator.
2. Candidate has to write his/ her seat number in this block.

3. The Question Booklet Number as printed above should be mentioned at the appropriate place on the OMR Answer Sheet.
4. All the Questions are provided with 4 options as 1, 2, 3 and 4. Candidate should select the most correct Option and mention the Option Number on the OMR Answer Sheet in front of the respective Question Number by **fully shading the Option Number with BLACK INK BALL POINT PEN Only.**
5. All Questions carry equal marks i.e. 1 Question has a weightage of 1 marks. Candidate should mind the available time for the examination and solve the questions accordingly.
6. The option shaded once on the OMR Answer Sheet should not be roughed or in any other way changed. Thus candidate should take utmost care while marking their options on OMR Answer Sheet. Such changes if any or any attempt to rough/ change options shall not be checked by the authorities.
7. Marks shall be awarded to the correct answers only during the evaluation of the OMR Answer Sheet. No marks shall be deducted for registering wrong answers (shading wrong option) or not attempting questions. Thus there is **NO NEGATIVE MARKING SYSTEM**.
8. All the rough work has to be done on the sheet provided for Rough Work in the Question Booklet only. Writing anything on the Question Paper Booklet, OMR Answer Sheet or any other Paper Sheet shall be treated as an unfair means and entitle for action under **"Prohibition of Unfair Practices during examination Ordinance – 1982"**.
9. Method of Shading the Correct Option on the OMR Answer Sheet:

Q.No. 25.How many Centimeters make 1 Meter?

(1) 10 (2) 100
(3) 1000 (4) 10000

The Correct Option for this Question is (1) and hence the (2) option on the OMR Answer Sheet in front of Question Number 25 has to be shaded as following

Correct Method of Shading Wrong Method of Shading

USE ONLY BLACK INK BALL POINT PEN FOR SHADING

IMPORTANT

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THIS QUESTION PAPER BOOKLET AND PART – 1 OF OMR ANSWER SHEET HAVE TO BE SUBMITTED TO THE INVIGILATOR AFTER THE EXAMINATION.

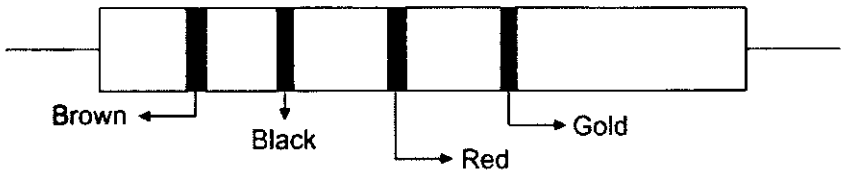
1. A coil with resistance of 60 ohms is to be wound using 0.5 mm diameter copper wire. Calculate the length of wire required if $\rho = 0.5 \frac{\pi mm2}{meter}$

1. 26.32 meter
2. 24.52 meter
3. 23.52 meter
4. 10.52 meter

2. Convert 80° C to kelvin

1. 250° K
2. 253° K
3. 350° K
4. 353° K

3. Determine the resistance of resistor for following colour code



1. 10Ω±5%
2. 1kΩ±5%
3. 1kΩ±10%
4. 100Ω±5%

4. In PMMC instruments PMMC stands for

1. Pressure Measuring Moving Coil
2. Permanent Magnet Moving Coil
3. Pressure Mass measuring coil
4. None of above

5. Thermocouple are

1. Passive transducer
2. Active transducer
3. Both active and passive
4. Output transducer

6. A Reynold number of 1000 indicates

1. Turbulent flow
2. Luminar flow
3. Laminar flow
4. None of above

7. The gauge factor is defined by

1. $\frac{\Delta L/L}{\Delta R/R}$
2. $\frac{\Delta R/R}{\Delta L/L}$
3. $\frac{\Delta R/R}{\Delta D/D}$
4. $\frac{\Delta R/R}{\Delta \ell/\ell}$

where L, D, ℓ & R are length, diameter, resistivity & resistance.

8. A/D converter is

1. Analog to digital converter
2. ASCII to decimal converter
3. Both 1 & 2
4. None of above

9. Operation of Mcleod guage used for low pressure measurement is based on the principle of

1. Gas law
2. Charles law
3. Pascal law
4. Boyle's law

10. Which of the following instrument is used to measure flow on the application of Bernoul's thearm

1. Orifice plate
2. Pitot tube
3. Both 1 & 2
4. None of above

11. The basic logic gate whose output is the compliment of input is

1. AND gate
2. OR gate
3. NOT gate
4. Ex-OR gate

12. A transformer

1. Changes ac to dc
2. Changes dc to ac
3. Steps up or down DC current or voltage
4. Steps up or down AC current or voltage

13. In semiconductor diode, depletion region is removed when

1. Diode is in forward conducting state
2. Diode is in reverse conducting state
3. Diode is connected to multimeter
4. All of above

14. Which of the following Boolean expression is correct for an EX-OR gate?

1. $A + \bar{B}$
2. $\bar{A} + B$
3. $A.B + \overline{A.B}$
4. $A.\bar{B} + B.\bar{A}$

15. The three terminal of bipolar junction transistor are called as

1. Source, gate, collector
2. Emitter, base, collector
3. Emitter, gate, collector
4. Source, emitter, collector

16. The weight of LSB as binary number is

1. 1
2. 2
3. 3
4. 4

17. Convert ten binary number 01011010 to hexadecimal

1. 5F
2. 5B
3. 5A
4. 5C

18. The number of hardware interrupts that 8085 consist of is

1. 2
2. 4
3. 6
4. 5

19. The instruction that pushes the contents or the specified register / memory location on to the stack is

1. Pushes
2. Poosh
3. Push
4. Pop

20. The instruction that adds immediate data of memory location specified by instruction / register to the content of another register / memory location is

1. ADD
2. SUB
3. AND
4. DIV

21. The movable part in LVDT is

1. Primary
2. Core
3. Secondary
4. None of above

22. The unit of strain is

1. cm / cm
2. m / m
3. N / cm^2
4. No unit

23. For measuring flow by venturimeter, it should be installed in

1. Vertical line
2. Horizontal line
3. Inclined with flow downward
4. Inclined with flow upward

24. Identify the variable area type of flowmeter from the given list

1. Pitot tube
2. Rotameter
3. Nozzle
4. Orifice plate

25. Which of the following is a desirable characteristic of an instrument?

1. High drift
2. High fidelity
3. Poor reproducibility
4. High measuring lag

26. Which of the following is a dynamic characteristic of an instrument?

1. Reproducibility
2. Accuracy
3. Sensitivity
4. Fidelity

27. Working principle of radiation pyrometer is based on the

1. Stafan-Boltzman law
2. Wiens law
3. Kirchoff law
4. Seebeck effect

28. 100 KN / m^2 pressure equal to

1. 1 atm
2. 1 mm Hg
3. 1 bar
4. 1 m bar

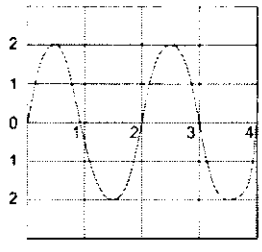
29. Reset rate is the another term used for

1. Dead time
2. Integral time
3. Derivate time
4. None of these

30. Cathode ray oscilloscope displays graph of waveform based on

1. Current
2. Voltage
3. Resistance
4. Capacitance

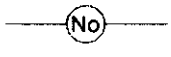
31. Determine the voltage & frequency for the signal show

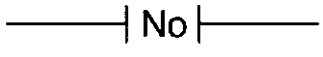


if the volt / div knob is on 2 & Times / div knob is 1 ms

1. 4V & 500 Hz
2. 4V & 1000 Hz
3. 6V & 500 Hz
4. 6V & 1000 Hz

32. Normally open contact in PLC is represented as

1. 

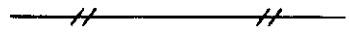
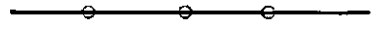
2. 

3. 
3. 

33. Which of the following is a part SCADA

1. Input module
2. Ladder diagram
3. RTU
4. Output module

34. Which is correct symbol for pneumatic signal

1. 
2. 
3. 
4. 

35. The PLC timer is required to calculate 10 second time period. The time base is set to 0.1 what value should be loaded in preset.

1. 10
2. 0.1
3. 100
4. 1000

36. HART is used for

1. Communication between devices
2. Controlling output devices
3. Sensing input devices
4. All of above

37. Determine the resistance if the applied voltage is 10 V & current is 2mA.

1. 100 Ω
2. 50 k Ω
3. 5 k Ω
4. 500 Ω

38. A recorder which records variation of one quantity with respect to time is

1. Circular chart recorder
2. Strip chart recorder
3. Electronic recorder
4. None of above

39. When a lamp is to be controlled from two places which switch is used

1. Two way switch
2. Toggle switch
3. Single pole single switch
4. Single pole double throw

40. In electronic system, standard signal is

1. 0-10 mA
2. 10-15 mA
3. 4-20 mA
4. 4-10 mA

SPACE FOR ROUGH WORK