

Marks Obtained :

B

NATIONAL INSTITUTE OF OCEAN TECHNOLOGY, CHENNAI

WRITTEN EXAMINATION - QUESTION PAPER FOR THE POST OF
PROJECT TECHNICIAN – Mechanical

Date : 02.05.2018

Candidate's Name : _____

Application ID : _____

Signature : _____

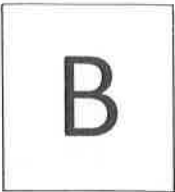
General Instructions :

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- The Duration of the Examination is 30 minutes.
- There are 25 objective type questions.
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QUESTION PAPER

B

1. The distance a drill advances into the work in one minute is?
A. RPM B. Cutting speed C. Feed D. None of above
2. The name of the standard taper provided on drills is?
A. Cutting tool B. Shank C. Drift D. Morse taper
3. MIG welding means
A. Metal inert gas welding B. Magnesium inert gas welding
C. Manganese inert gas welding D. Metal inert gasoline welding
4. The pattern on the work surface caused by the movement of the cutting tool is called?
A. Roughness B. Surface texture C. Waviness D. Roughness spacing
5. The process of bevelling the end of the hole is called?
A. Counterboring B. Spot facing C. Countersinking D. Reaming
6. Surface plates are made of?
A. Alloy steels B. Fine grained cast iron C. High grade cast steel D. Wrought iron
7. Polymetallic nodules are found in CIOB at a depth of
A. 500 – 600 m B. 1000 – 1200 m C. 5200 – 5500 m D. 100 – 200 m
8. TIG welding means
A. Titanium inert gas welding B. Tungsten inert gas welding
C. Tungsten inert gasoline welding D. Titanium inert gasoline welding
9. Flux in a welding helps to
A. Shield molten metal pool from atmosphere and prevent oxidation B. Increase the temperature
C. Quick oxidation D. To cool the temperature
10. IMD means
A. Indian Meteorological Department B. International Meteorological Department
C. Indian Mining Department D. International Mining Department
11. Hacksaw blades is made by?
A. Mild steel B. Cast iron C. High carbon D. Pig iron
12. The taper shank drills are held on the machine by means of ?
A. Drift B. Vice C. Sleeve D. Chucks
13. A jig is a special device?
A. Which holds, supports, locates and also guides the cutting tool B. Which locates the cutting tool
C. Which holds the job D. Which guides the tool



14. The thread angle of I.S.O. metric thread is?
A. 55 B. 60 C. 45 D. None of above
15. The equivalent of 1" in metric is?
A. 24.5 mm B. 25.04 mm C. 2.54 mm D. 25.4 mm
16. The feeler gauge is used for?
A. Checking the accuracy of the hole locators B. Checking surface roughness
C. Checking the gap between mating parts D. Checking the radius of workpieces
17. Formation of a chip while cutting is based on the ?
A. Clearance and wedge angle of the Tool B. Clearance angle of the tool
C. Rake angle of the tool D. Clearance angle of the tool
18. The least count of a vernier metric micrometer is?
A. 0.0001 mm B. 0.001 mm C. 0.01 mm D. 0.1 mm
19. The point angle for a standard drill is?
A. 108 deg B. 135 deg C. 60 deg D. 118 deg
20. One millimetre is equal to?
A. 0.0001 m B. 0.001 m C. 0.01 m D. None of above
21. CIOB means
A. Central Indonesian Ocean Basin B. Central Indian Ocean Basin
C. Central Indian Ocean Basement D. Corner Indian Ocean Basin
22. HSS drill bit means
A. Highly strong steel drill bit B. High speed steel drill bit
C. High speed selection drill bit D. High speed strong drill bit
23. EOT crane means
A. Electronic operated overhead traveling crane B. Electrical operated overturn traveling crane
C. Electronic operated overturn traveling crane D. Electrical operated overhead traveling crane
24. Machine used to test hardness of material is
A. Brinell B. UTS C. Lathe D. None of the above
25. _____ defects can be seen by Dye Penetration test
A. Surface B. Internal C. Hardness D. Core

ANSWER KEY

Post: Project Technician (Mechanical)

Date: 02.05.2018

QUESTION NO.	A	B	C
1.	C	C	B
2.	C	D	B
3.	A	A	D
4.	B	B	A
5.	D	C	A
6.	C	B	C
7.	C	C	D
8.	B	B	A
9.	D	A	B
10.	B	A	C
11.	C	C	C
12.	D	C	C
13.	A	A	A
14.	B	B	B
15.	C	D	D
16.	B	C	C
17.	C	C	C
18.	B	B	B
19.	A	D	D
20.	A	B	B
21.	B	B	B
22.	B	B	C
23.	D	D	B
24.	A	A	A
25.	A	A	A

Marks Obtained :

A

NATIONAL INSTITUTE OF OCEAN TECHNOLOGY, CHENNAI

WRITTEN EXAMINATION - QUESTION PAPER FOR THE POST OF
PROJECT TECHNICIAN- Electronics/Instrumentation

Date : 03.05.2018

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Application ID : _____

Signature : _____

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A

1. The class of amplifier which is normally used in audio amplification systems is _____.
 - a. CD.
 - b. A
 - c. B
 - d. AB()

2. The Zener diode is used as a _____.
 - a. Voltage regulator
 - b. Voltage amplifier.
 - c. Current amplifier.
 - d. All the above.()

3. The forward bias voltage required to make a diode conduct is about _____.
 - a. 1.5 V
 - b. 0.7V
 - c. 12V.
 - d. 24 V.()

4. The resistance of an electric copper conductor is inversely proportional to its _____.
 - a. Temperature
 - b. Length
 - c. Area of Cross Section
 - d. None of the above()

5. The gain of a signal amplifier in _____.
 - a. V_{out}/V_{in}
 - b. V_{in}/V_{out}
 - c. P_{in}/P_{out} .
 - d. None of the above()

6. Batteries are connected in parallel in order to _____.
 - a. Increase the required terminal voltage
 - b. Reduce cost of wiring
 - c. Increase the current rating
 - d. Reduce the time required to fully charge them after use()

A

7. As per Nyquist criterial, sampling frequency should be greater than ___ times of signal frequency.

- a. 2
- b. 3
- c. 4
- d. 10

()

8. A voltage of 24 V is applied to two 10 ohms resistors in series. The voltage drop across each resistor will be _____.

- a. 24V
- b. 12 V
- c. 48 V
- d. 0 V

()

9. Two capacitors of 2 microfarad are connected in series. The equivalent capacitance is _____ microfarad.

- a. 1
- b. 2
- c. 4
- d. 0.5

()

10. Resistors of 5, 2 and 3.33 ohms are connected in parallel. The equivalent resistance will be _____.

- a. 10.33
- b. 10
- c. 1
- d. 12

()

11. _____ is used for the measurement of very high temperatures.

- a. RTD
- b. Thermocouple
- c. Pyrometers
- d. B and C

()

12. The purpose of schottky diode is to have _____.

- a. Fast switching
- b. Voltage amplification
- c. Reverse blocking
- d. Voltage regulation

()

A

13. The device used for measuring displacements is _____.
- a. LVDT
 - b. Transmitter
 - c. Screw gauge
 - d. None of the above
- ()
14. The Schering Bridge is used for measuring unknown _____.
- a. Resistance
 - b. Capacitance
 - c. Inductance
 - d. Impedance
- ()
15. In an amplification process, _____ feedback gives better stability.
- a. Positive
 - b. Reverse
 - c. Feed forward
 - d. Negative
- ()
16. The electronic switching device having highest input impedance is _____.
- a. Transistor
 - b. FET
 - c. MOSFET
 - d. CMOS
- ()
17. The electronic switching device having highest input impedance is _____.
- a. Transistor
 - b. FET
 - c. MOSFET
 - d. CMOS
- ()
18. In signal transmission, _____ is not affected by noise
- a. 0-5V
 - b. 0-10v
 - c. 4-20 mA
 - d. 0-20mA.
- ()
19. A flow transmitter works on the principle of _____
- a. Newton
 - b. Faraday
 - c. Lenz

A

- d. Sagnac ()
20. In a fiber optic cable, fiber optic losses are measured in _____.
a. dB
b. Hz
c. Watts
d. All the above ()
21. Inductance is measured in _____.
a. Ohm
b. Mho
c. Farad
d. Henry ()
22. Ammeters should be always connected in a circuit in _____.
a. Parallel
b. Series
c. Hybrid
d. All the above ()
23. In the ocean, as the water depth increase, the water temperature _____.
a. Increases
b. Decreases
c. Remains same
d. None of the above ()
24. Global warming results in _____.
a. Increase in atmospheric temperature
b. Decrease in temperature
c. Increase in pressure
d. Increase in solar light intensity ()
25. The temperature difference between the upper and deeper waters is used to generate electricity based on _____energy.
a. Ocean thermal
b. Tidal
c. Wave
d. All the above ()

A

Electra's

1	D
2	A
3	B
4	C
5	A
6	C
7	A
8	B
9	A
10	C
11	D
12	A
13	A
14	B
15	D
16	C
17	C
18	C
19	B
20	A
21	D
22	B
23	B
24	A
25	A

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A

1. The motor used in a ceiling fan is _____.
 - a. Split-phase motor.
 - b. Capacitor start and capacitor run motor.
 - c. Universal motor.
 - d. Capacitor starts motor. ()

2. The motor used in a mixer-grinder of _____ type.
 - a. Direct Current.
 - b. Induction.
 - c. Synchronous.
 - d. Universal. ()

3. In a capacitor start single-phase induction motor, the capacitor is connected _____.
 - a. In series with main winding.
 - b. In series with auxiliary winding.
 - c. In series with both the windings.
 - d. In parallel with auxiliary winding. ()

4. When the transmission voltage increases, the size of electric conductor _____.
 - a. Increases.
 - b. Does not change.
 - c. Decreases.
 - d. Increases proportionately. ()

5. The electric conductor size mainly depends on the _____.
 - a. Operating voltage
 - b. Power factor of the load
 - c. Current carried of the load.
 - d. None of the above ()

6. The power factor of a purely resistive circuit is _____.
 - a. Zero
 - b. Unity.
 - c. Lagging.
 - d. Leading. ()

A

7. The formula used for calculating power in a three phase electric circuit is _____

- a. $3V_L I_L \cos \phi$
- b. $\sqrt{3} V_L I_L \cos \phi$
- c. $\sqrt{3} V_L I_L \sin \phi$
- d. $3 V_L I_L \sin \phi$

()

8. Iron losses in power transformer represent _____.

- a. Hysteresis loss
- b. Copper Loss
- c. Hysteresis and Eddy current loss
- d. Copper and Eddy current Loss

()

9. The resistance of an electric copper conductor is inversely proportional to its _____.

- a. Temperature
- b. Length
- c. Area of Cross Section
- d. None of the above

()

10. In a 3 phase transmission line, when the spacing between the conductors decreases, then inductance _____

- a. Increases
- b. Decreases
- c. Remains same
- d. None of the above

()

11. When a synchronous motor is driven above its synchronous speed it acts as a _____.

- a. Generator
- b. Motor
- c. Capacitor
- d. All the above.

()

12 In power cables, sheaths are used for _____.

- a. Better insulation
- b. Mechanical strength
- c. Moisture protection.
- d. None of the above

()

A

13. 415V ac is categorized in the _____ range.
- a. Low voltage
 - b. Medium voltage
 - c. High voltage.
 - d. None of the above. ()
14. In power systems, a relay is used for _____.
- a. fault avoidance
 - b. fault detection
 - c. tripping
 - d. All ()
15. Air Circuit Breaker used for operating _____ circuits.
- a. LT.
 - b. HT.
 - c. LT&HT.
 - d. None. ()
16. Batteries are connected in parallel in order to _____.
- a. Increase the required terminal voltage
 - b. Reduce cost of wiring
 - c. Increase the current rating
 - d. Reduce the time required to fully charge them after use ()
17. A 3 phase 2 pole induction motor operates at 50 Hz has ___rpm.
- a. 3000
 - b. 1500
 - c. 750
 - d. None of the above ()
18. Which of the following motors has a high starting torque?
- a. AC series motor
 - b. DC series motor
 - c. Induction motor
 - d. Synchronous motor. ()

A

19. A step-up transformer increases the _____.
- a. Voltage
 - b. Current
 - c. Power
 - d. Frequency.
- ()
20. Inductance is measured in _____.
- a. Ohm
 - b. Mho
 - c. Farad
 - d. Henry
- ()
21. Ammeters should be always connected in a circuit in _____.
- a. Parallel
 - b. Series
 - c. Hybrid
 - d. All the above
- ()
22. In the ocean, as the water depth increase, the water temperature _____.
- a. Increases
 - b. Decreases
 - c. Remains same
 - d. None of the above
- ()
23. Global warming results in _____.
- a. Increase in atmospheric temperature
 - b. Decrease in temperature
 - c. Increase in pressure
 - d. Increase in solar light intensity
- ()
24. The temperature difference between the upper and deeper waters is used to generate electricity based on _____ energy.
- a. Ocean thermal
 - b. Tidal
 - c. Wave
 - d. All the above
- ()

A

25. The research ship Sagar Nidhi belongs to _____.

- a. NIOT
- b. NIO
- c. ONGC
- d. Geological Survey of India

()

A

Electrical

1	D
2	D
3	B
4	C
5	C
6	B
7	B
8	C
9	C
10	A
11	A
12	C
13	A
14	B
15	A
16	C
17	A
18	B
19	A
20	D
21	B
22	B
23	A
24	A
25	A