



COCHIN SHIPYARD LIMITED

(A Govt. of India Enterprise)
KOCHI -15

OBJECTIVE TYPE WRITTEN TEST TO THE POST OF SENIOR PROJECT OFFICER (ELECTRICAL) FOR CANSRU

DATE: 14.06.2024

DURATION OF THE TEST : 60 Minutes
MAXIMUM MARKS : 50 Marks

DO NOT OPEN THIS QUESTION PAPER-CUM-ANSWER BOOKLET UNTIL ASKED TO DO SO

GENERAL INSTRUCTIONS

1. **ANSWER ALL QUESTIONS.** There shall be no negative marks.
2. **Answers are to be marked using ✓ mark against the most appropriate option among the options provided in the Question Booklet using BALL POINT PEN.**
3. Rough work, if any, is to be done on space provided in the Question Booklet only. No separate sheet will be provided for rough work.
4. **Calculators, Mobile, Electronic items etc., are not permitted inside the examination hall.**
5. Candidates seeking, receiving and /or giving assistance during the test will be disqualified.
6. The right to exclude any question (s) from final evaluation rests with CSL.
7. Do not seek any clarification on any item in the Question Booklet. Use your judgment.

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Please fill in the following details using ball point pen.

Name of Candidate	
Registration No.	
Name of Post	
Signature of candidate	
Signature of invigilator	

**THIS QUESTION PAPER-CUM-ANSWER BOOKLET SHOULD BE HANDED OVER
TO THE INVIGILATOR ON COMPLETION OF THE TEST**

PHASE I
OBJECTIVE TYPE TEST FOR THE POST OF SENIOR PROJECT OFFICER
(ELECTRICAL) FOR CANSRU

I. GENERAL KNOWLEDGE

1. is India's first AI software engineer that can understand high-level human instructions, break them down into steps, research relevant information, and write code to achieve the given objective.
 - a) Devika
 - b) Devin
 - c) Sonia
 - d) Sophia
2. Who said "Give me six hours to chop down a tree and I will spend the first four sharpening the axe" ?
 - a) Rabindranath Tagore
 - b) Oscar Wilde
 - c) Abraham Lincoln
 - d) Swami Vivekananda
3. Which of the following separates the Andaman and Nicobars?
 - a) Ten Degree Channel
 - b) Eleven Degree Channel
 - c) English Channel
 - d) Indira Point
4. Which of the following is the Southern-most point of India?
 - a) Indira Col
 - b) Indira Point
 - c) Great Nicobar
 - d) East Island

5. Consider the following naval bases or stations of India and their respective locations:

- I. INS Kadamba – Karwar, Karnataka
- II. INS Shivaji – Ratnagiri, Maharashtra
- III. INS Satavahana – Visakhapatnam, Andhra Pradesh
- IV. INS Baaz – Campbell Bay, Andaman & Nicobar Islands

Which of the above is / are correct?

- a) Only I, II & III
- b) Only I, III & IV
- c) Only II, III & IV
- d) All I, II, III & IV

6. Which city is called “California of India” ?

- a) Nagpur
- b) Aurangabad
- c) Navi Mumbai
- d) Ratnagiri

7. Who captured Andaman Islands during World War 2?

- a) Japanese
- b) British
- c) Portuguese
- d) Norwegians

8. Which team won the inaugural season of the Indian Premier League (IPL) in 2008?

- a) Chennai Super Kings
- b) Rajasthan Royals
- c) Mumbai Indians
- d) Kolkata Knight Riders

9. Out of the following teams, which one has never won an Indian Premier League (IPL) title?

- a) Royal Challengers Bangalore
- b) Kings XI Punjab (Now Punjab Kings)
- c) Delhi Capitals
- d) Sunrisers Hyderabad

10. India is not a member of which of the following organization?

- a) BIMSTEC
- b) BRICS
- c) NATO
- d) SAARC

II. SUBJECT BASED

11. The power factor of the AC supply can be improved by

- a) Synchronous generator
- b) Universal motor
- c) Synchronous condenser
- d) SCR

12. The ratio of overall maximum demand of the plant to the sum of individual maximum demand of various equipment is

- a) Load factor
- b) Diversity Factor
- c) Demand Factor
- d) Maximum Demand

13. The visible, audible, partial discharge at the surface of the conductor at high voltage is called as

- a) Skin effect
- b) Corrona
- c) Creep
- d) None of these.

14. Which material is recommended as the fire extinguisher in electrical cases

- a) Carbon Tetra Chloride
- b) Carbon Dioxide
- c) Sulphur hexafluoride
- d) Any of the above

15. The protective device to indicate the internal fault in a transformer is

- a) Thermal relay
- b) Buchholz relay
- c) OVR
- d) EFR

16. The power factor in a transformer

- a) Is always unity
- b) Is always leading
- c) Is always lagging
- d) Depend on the power factor of the load

17. The path of a magnetic flux in a transformer should have

- a) High resistance
- b) High reluctance
- c) Low resistance
- d) Low reluctance

18. No load current in a transformer

- a) lags behind the voltage by 75 degree
- b) leads the voltage by about 75 degree
- c) lags the voltage by about 15 degree
- d) leads the voltage by about 15 degree

19. The function of conservator in a transformer is

- a) to protect against the internal fault
- b) to reduce copper as well as core losses
- c) to cool the transformer oil
- d) to take care of the expansion and contraction of transformer oil due to variation of temperature

20. During the open circuit test of transformer

a) primary is supplied rated voltage

b) primary is supplied full load current

c) primary is supplied current at reduced voltage

d) primary is supplied rated kVA

21. The code of practice for earthing is governed by

a) IS:3034

b) IS:4340

c) IS:4440

d) IS:4430

22. Maximum possible earth resistance at large power stations is

a) 0.5ohm

b) 1ohm

c) 2ohm

d) 8ohm

23. If the armature of DG set overheats, the probable cause may be

a) Overloading

b) Internal short circuit

c) Both a and b

d) None of the above

24. In squirrel cage induction motors, the rotor slots are usually given slight skew in order to

a) Reduce windage losses

b) Reduce eddy currents

c) Reduce magnetic hum

d) Reduce accumulation of dirt and dust.

25. If any two phases for an induction motor are interchanged

a) Motor will run in opposite direction

b) Motor will run at reduced speed

c) Motor will not run

d) Motor will burn

26. Charging voltage/current ripple factor for VRLA batteries should less than

- a) less than 5%
- b) less than 2%**
- c) less than 15%
- d) none

27. The commercial efficiency of a shunt generator is maximum when its variable loss equals.....loss.

- a) constant**
- b) stray
- c) iron
- d) friction and windage

28. The main function of an equalizer bar is to make the parallel operation of two over compounded DC generator

- a) stable**
- b) possible
- c) regular
- d) smooth

29. The generator has poorest voltage regulation.

- a) series**
- b) shunt
- c) compound
- d) cumulative compound

30. The normal value of armature resistance of a dc motor is

- a) 0.005
- b) 0.5**
- c) 10
- d) 100

31.A 0-150 V voltmeter has a guaranteed accuracy of 1% of full-scale reading. The voltage measured by this instrument is 75V. what is the percentage of limiting error?

- a) 1%
- b) 2%
- c) 3%
- d) 4%

32. Consider the following statements regarding parallel connection of 3-phase transformers-

1. The secondaries of all transformers must have the same phase sequence.
 2. The phase displacement between primary and secondary line voltages must be the same for all transformers which are to be operated in parallel.
 3. The primaries of all transformers must have the same magnitude of line voltage
- which of the above statements are correct?

- a) 1 and 3 only
- b) 1, 2 and 3
- c) 1 and 2 only
- d) 2 and 3 only

33. What is the value of shunt resistance an ammeter, if the range is extended from 1mA to 10mA and meter has a resistance of 27 ohm?

- a) 3 ohm
- b) 4 ohm
- c) 2.5 ohm
- d) 3.5 ohm

34. Which one of the following consists of a layer of metal at the top named gate, a silicon dioxide layer below it, and a semiconductor substrate as the bottom-most layer?

- a) JFET
- b) BJT
- c) MOSFET
- d) DMOSFET

35. For an ideal power supply. The output voltage is independent of the load and the percentage regulation is-

- a) Equal to unity
- b) Greater than unity
- c) Equal to zero
- d) Less than unity but not zero

36. Which one of the following statements is NOT correct regarding lap and wave winding?

- a) Lap-winding is suitable for high-voltage but low-current generators.
- b) Lap-winding is suitable for low-voltage but high-current generators.
- c) wave-winding is used for high-voltage, low-current machines.
- d) when large currents are required, it is necessary to use lap-winding.

37. A 12-pole, 3-phase alternator driven at a speed of 500 rpm, supplies power to an 8-pole, 3 phase induction motor, if the slip of the motor at full-load is 3%, what is the full load speed of the motor?

- a) 525.5 rpm
- b) 627.5 rpm
- c) 727.5 rpm
- d) 826.5 rpm

38. If P_1 and P_2 be the iron and copper losses of a transformer on full-load, what is the ratio of P_1 and P_2 such that maximum efficiency occur at 75% full-load?

- a) 4/3
- b) 3/4
- c) 5/7
- d) 9/16

39. Which of the following are the sources of heat generation within the cables?

- 1. I^2R losses in the conductor.**
- 2. Dielectric losses in the cable insulation.**
- 3. Losses in the metallic sheath and armourings.**

Select the correct statement

- a) 1 and 2 only
- b) 1,2 and 3**
- c) 2 and 3 only
- d) 1 and 3 only

40. Which of the following statements is correct regarding fault analysis?

- a) Balanced three phase voltage contain zero sequence components.
- b) Balanced three phase voltage do not contain negative sequence components.**
- c) Balanced three phase voltage contains only negative sequence components.
- d) Balanced three phase voltage contains positive and negative sequence components.

41. When a synchronous motor runs at no load with adjustable excitation over a wide range, power factor can be improved by varying the excitation of its.

- a) Field winding**
- b) Armature winding
- c) Commutator winding
- d) Compound winding

42. What is the maximum number of points of light, fan and 5A socket outlets that can be connected in one circuit as per recommendation of Indian standards?

- a) 8
- b) 10**
- c) 12
- d) 9

43. In dielectric heating, if the capacitor is loss free, the heat produced will be-

- a) zero
- b) Infinity
- c) Proportional to the value of capacitance
- d) Proportional to the frequency

44. Unbalanced supply voltage given to a 3-phase, delta-connected induction motor will cause

- a) Zero sequence currents
- b) Less heating of the rotor
- c) Negative sequence component current
- d) All of the above

45. In ac series motor the purpose of providing compensating winding is to

- a) Reduce sparking at brushes
- b) Increase the torque
- c) Reduce heating of armature
- d) Minimum vibration

46. The parameters connected with the operation of a synchronous motor are

- I. Speed
- II. Power factor
- III. Armature current

When the excitation of the motor is varied, which parameters vary along with it.

- a) 1 only
- b) 2 only
- c) 2 and 3 only
- d) 1,2 and 3

47. In series parallel control of DC series motors

- a) Speed in series arrangement is four times the speed in parallel arrangement.
- b) Speed in series arrangement is one fourth the speed in parallel arrangement.**
- c) Speed in series arrangement is double of the speed in parallel arrangement.
- d) Speed in series arrangement is half of the speed in parallel arrangement.

48. A Thyristorised, three phase, fully controlled converter feed a dc load that draws a current then the input ac line current to the converter has

- a) An rms value equal to the dc load current
- b) An average value equal to the dc load current
- c) A peak value equal to the dc load current**
- d) A fundamental frequency component, whose rms value is equal to the dc load current.

49. Buchholz relay works on the principle of

- a) Production of eddy currents whenever load changes are rapid
- b) Ionization of transformers oil
- c) Magnetic hum due to sudden variation in load
- d) Generation of gas due to breakdown of the insulation**

50. When the supply voltage to an induction motor is reduced by 10% the maximum torque will decrease by approximately

- a) 5%
- b) 10%
- c) 20%**
- d) 40%
