

Choose the correct option:

1. At what interval the mixer must be painted?
 - a. 3 months
 - b. 6 months
 - c. 9 months
 - d. 12 months
2. Which is the best type of shuttering?
 - a. Wooden Planks Shuttering
 - b. Steel Shuttering
 - c. Temporary Brick Masonry Shuttering
 - d. None of the above
3. Which one of these is a hand tool for excavation of soil?
 - a. Mattock
 - b. Trenchers
 - c. Bulldozer
 - d. Back Hoe Excavator
4. Which is an excavating tool consisting of a metal plate attached to a long handle with acute angle?
 - a. Hoe
 - b. Spade
 - c. Shovel
 - d. Trowel
5. Which hand tool is having metal teeth and is use to remove small layer of soil?
 - a. Mattock
 - b. Trowel
 - c. Rake
 - d. Pick Axe
6. Which machine is used for larger depth excavation?
 - a. Trenchers
 - b. Back Hoe Excavator
 - c. Dragline Excavator
 - d. Wheeled Excavator
7. Which machine is used to cut pavement surface while road repair works?
 - a. Bulldozer
 - b. Chain Trencher
 - c. Wheeled Trencher
 - d. Dragline
8. What is the full form of SCADA?
 - a. Supervisory Control and Data Acquisition
 - b. Supervisory Control and Distribution Accountability
 - c. System Control and Distribution Assessment
 - d. System Control and Data Assessment
9. Which one of these is NOT considered as fossil fuel?
 - a. Coal
 - b. Natural Gas
 - c. Bio Gas

- d. Petroleum
- 10. For the exchange of power, which one of these need not required to be synchronized?
 - a. Voltage
 - b. Current
 - c. Frequency
 - d. Phase Sequence
- 11. The amount of work done by electricity is measured in
 - a. Kilo Watt
 - b. Kilo Watt hour
 - c. Joule
 - d. Pascal
- 12. The standard frequency in India is _____
 - a. 49 Hz
 - b. 49.5 Hz
 - c. 50 Hz
 - d. 50.5 Hz
- 13. The unit for potential difference between two points in an electrical circuit is _____
 - a. Ohm
 - b. Volt
 - c. Ampere
 - d. Coulomb
- 14. What is the angle of deviation in C- type tower?
 - a. 0 degree to 2 degree
 - b. 2 degree to 15 degree
 - c. 15 degree to 30 degree
 - d. 30 degree to 60 degree
- 15. Which type of tower is NOT called as Tension tower/section tower?
 - a. Type A
 - b. Type B
 - c. Type C
 - d. Type D
- 16. The portion above the top cross arm is called _____ of transmission tower.
 - a. Leg
 - b. Body
 - c. Cage
 - d. Peak
- 17. The part which is close to cabinet in a Tracked Excavator is _____
 - a. Boom
 - b. Dipper
 - c. Digging-bucket
 - d. None of these
- 18. At what interval the mechanic should check the running of electric motors?
 - a. Monthly
 - b. Quarterly
 - c. Half yearly
 - d. Annually
- 19. Theodolite is used for

- a. Hammering
 - b. Smoothing
 - c. Compacting
 - d. Surveying
20. Which one of these is not included in Foundation Stage of construction Transmission foundation?
- a. Soil investigation
 - b. Soil excavation
 - c. Stub Setting
 - d. Curing
21. What is the bearing capacity of tower on a normal soil?
- a. 25,000 sq. m
 - b. 12,500 sq. m
 - c. 62,500 sq. m
 - d. 40,000 sq. m
22. Excavated earth (spoil), materials, tools, and equipment shall be placed _____ away from the edge of the excavation.
- a. 2 feet
 - b. 3 feet
 - c. 4 feet
 - d. 5 feet
23. Bar bending schedule can be used for
- a. Reinforcement Cutting
 - b. Reinforcement Bending
 - c. Making skeleton of structural member
 - d. All of the above
24. The shuttering should be removed after _____.
- a. 7 days
 - b. 14 days
 - c. 21 days
 - d. 28 days
25. What are the benefits of Ready Mix Concrete?
- a. Reduces noise and dust pollution at site
 - b. Doesn't require storage space for raw materials at site
 - c. Offers better quality, and consistent mix than site mix concrete
 - d. All of the above
26. Which is the best type of Curing?
- a. Sprinkling of water
 - b. Membrane Curing
 - c. Steam Curing
 - d. Ponding way of Curing
27. Tower footing resistance should not exceed _____ ohms.
- a. 0.5
 - b. 1
 - c. 5
 - d. 10
28. Which one of these is an environmental factor which causes accident at site?

- a. Lack of vision
 - b. Insufficient light
 - c. Lack of vision
 - d. Improper temporary structure arrangements
29. What is ERP?
- a. Emergency Response Plan
 - b. Emergency Required Plan
 - c. Emergency Response Priority
 - d. Emergency Required Priority
30. The safety gloves can be made up of
- a. Neoprene
 - b. Plastic
 - c. Gloves
 - d. All of the above
31. All the accident cases to be informed by Section In charge/Engineer to Project safety head within _____ of accident.
- a. 15 min
 - b. 30 min
 - c. 45 min
 - d. 60 min
32. Which one of these is a portable ladder?
- a. Plain rung ladder
 - b. Roof ladder
 - c. Step ladder
 - d. All of the above
33. What is fire buckets filled with?
- a. Clean Dry Sand
 - b. Wet Sand
 - c. Carbon Dioxide
 - d. Water
34. Why do people behave unsafe?
- a. Overconfidence
 - b. Personal Problem
 - c. Lack of Knowledge
 - d. All of the above
35. For making safety zones, the HT & LT terminals are checked with what?
- a. Argon tester
 - b. Neon tester
 - c. Fluorine tester
 - d. Chlorine tester
36. Portable ladders are normally constructed of which material?
- a. Wood
 - b. Aluminum
 - c. Fiberglass
 - d. All of the above
37. Accident at workplace can be caused by working on unsafe or dangerous equipment such as
- a. Cleaning/greasing or adjusting any of running machine

- b. Working on machine under off condition
 - c. Using insulated tools
 - d. None of the above
38. _____ are the most effective means of protecting electrical lines against lightning and switching.
- a. Circuit Breaker
 - b. Lightning Arrester
 - c. HRC Fuse
 - d. Isolator
39. For extinguishing flammable gas and live Electrical equipment, the class of fire extinguisher used is _____
- a. Class A
 - b. Class B
 - c. Class C
 - d. Class D
40. Fire can be extinguished by eliminating
- a. Flashing point
 - b. Ignition temperature
 - c. Explosive range
 - d. All of the above
41. OHM is unit of
- a. Resistance
 - b. Volts
 - c. Current
 - d. None of the above
42. Very purpose of earth rod is
- a. Safety of working personal
 - b. Earthing of nearby equipment
 - c. None of the above
 - d. Both of the above

AVERAGE

43. Where is Schmidt used?
- a. Wooden Surface
 - b. Metal Surface
 - c. Concrete Surface
 - d. Glass Surface
44. Which instrument is used to measure soil resistivity?
- a. Theodolite
 - b. Megger
 - c. Telescope
 - d. None of these
45. What is RCC?
- a. Combination of steel and concrete

- b. Combination of stone and concrete
 - c. Combination of steel and stone
 - d. Combination of steel, stone and concrete
46. For steam curing, what should be the maximum temperature of steam?
- a. 65 deg Celsius
 - b. 70 deg Celsius
 - c. 75 deg Celsius
 - d. 80 deg Celsius
47. Which is the best method of curing for any type of foundation?
- a. Covering the foundation with dry cloth
 - b. Sprinkling of water on foundation
 - c. Putting mud across the foundation
 - d. All of the above
48. In which type of soil hard rock is encountered form 1.5 m to 2.5 m below Ground Level?
- a. Wet Soil
 - b. Hard Rock
 - c. Soft Soil
 - d. Normal Soil
49. The maximum capacity of Electric Automatic Rebar Bending Machine is up to _____.
- a. 30 mm
 - b. 32 mm
 - c. 35 mm
 - d. 42 mm
50. The function of tracked excavator is done by _____
- a. Pneumatics air
 - b. Hydraulics fluid
 - c. Robotics
 - d. None of the above
51. Challenges faced by power sector activity includes
- a. Availability of Coal
 - b. Huge T&D Losses
 - c. Approval & License's
 - d. All of the above
52. Impedance is a combination of
- a. Resistance and reluctance
 - b. Reactance and Conductance
 - c. Reactance and Resistance
 - d. Resistance and Conductance
53. The power generated at generating station is levelled between _____
- a. Below 1.1 kV
 - b. Between 3.3 kV to 33 kV
 - c. Between 33 kV to 66 kV
 - d. Above 66 kV
54. Which instrument converts DC to AC?
- a. Inverter
 - b. Rectifier
 - c. Chopper

- d. Cyclo converter
55. Which type of tower is suitable for a deviation of 0 degree to 2 degree?
- a. A type
 - b. B type
 - c. C type
 - d. D type
56. Transmission Company must carry out periodical review of
- a. Line losses
 - b. Overload Transformer
 - c. Revenue Collection
 - d. All of the above
57. In case of vibrator, force applied to the needle should be _____ than its weight.
- a. Less
 - b. More
 - c. May be less or more
 - d. None of these
58. Entry of water inside the motor will
- a. Corrode the internal wiring
 - b. Burn the internal wiring
 - c. Save the internal wiring
 - d. All of the above
59. Any dirt should be wiped off with piece of chamois leather or soft silk rag moistened with_____
- a. Water
 - b. Alcohol
 - c. Oil
 - d. Gel
60. Electric rebar cutters are bar cutting equipment that can cut bars up to _____ diameters.
- a. 14 mm
 - b. 16 mm
 - c. 18 mm
 - d. 20 mm
61. What is the advantage of Hydraulic Electric Motor?
- a. Creates no sparks or flames
 - b. Abrasive in nature
 - c. Portable
 - d. All of the above
62. The cutting capacity of wire rope cutters varies from
- a. 5 mm to 25 mm diameter
 - b. 2.5 mm to 25 mm diameter
 - c. 2.5 mm to 20 mm diameter
 - d. 1.5 mm to 20 mm diameter
63. How many driving rolls are present in Spiral Hoop Radial Bender?
- a. One
 - b. Two
 - c. Three
 - d. Four
64. What are the requirements for excavation in the hard rock areas _____

- a. Chiseling
 - b. Drilling
 - c. Blasting
 - d. All of the above
65. The radius of bend for plain mild steel should not be less than _____ of the bar diameter.
- a. 5 times
 - b. 6 times
 - c. 7 times
 - d. 8 times
66. Where concrete blocks are used for ensuring the cover and positioning reinforcement with suitable binding wire, they shall be made of mortar not leaner than 1 (one) part cement to 2 (two) parts sand by volume and cured in a pond for at least _____.
- a. 1 week
 - b. 2 weeks
 - c. 3 weeks
 - d. 4 weeks
67. Centering provides support to which type of surfaces?
- a. Horizontal
 - b. Vertical
 - c. Inclined Surfaces
 - d. All of the above
68. Which type of shuttering reduces the strength of cement concrete by soaking cement slurry?
- a. Steel Shuttering
 - b. Wooden Plank Shuttering
 - c. Temporary Brick Masonry Shuttering
 - d. None of the above
 - e. b&c above
69. What are the grades of OPC?
- a. OPC 43
 - b. OPC 53
 - c. OPC 63
 - d. Both (a) and (b)
70. During Steam Curing temperature of steam should be restricted to _____.
- a. 65 degrees Celsius
 - b. 75 degrees Celsius
 - c. 80 degrees Celsius
 - d. 85 degrees Celsius
71. Which type of materials are used to cover the foundations in Membrane Curing?
- a. moist curing Bituminised water proof papers
 - b. wax emulsions
 - c. plastic sheets
 - d. All of the above
72. In which type of foundation water requirement is less?
- a. Sprinkling of water
 - b. Covering with gunny bags
 - c. Filling Pit with water
 - d. Steam Curing

73. The number of samples to be taken for testing and verifying concrete strength shall be in accordance with IS: 456 but shall be a minimum of _____ cubes per foundation.
- 4
 - 6
 - 8
 - 10
74. Ear protection must be used in areas where the noise level is above _____ dB
- 65
 - 75
 - 85
 - 95
75. For lines of voltage above 11 kV, the ground clearance must be minimum _____
- 4.0 metre
 - 5.2 metre
 - 6.1 metre
 - 7.3 metre
76. At what value of current muscle contraction occurs in human body?
- 0 – 5 mA
 - 5 – 10 mA
 - 10 – 15 mA
 - 15 – 20 mA
77. What does severity of shock depends upon?
- Path of current through the body.
 - Amount of current flowing through the body.
 - Duration of the shocking current through the body.
 - All of the above.
78. The correct way of leaning a ladder is to place it at an angle of _____ degrees.
- 65
 - 55
 - 75
 - 70
79. Basic fundamental of safety are
- Cooperation of all co-workers is essential to avoid accident
 - Accident is the result of unsafe working condition and unsafe work
 - Use of incomplete or little knowledge is dangerous and may invite accident
 - All of the above
80. Employee shall report any dangerous conditions of the undertaking's properties, equipment or personnel to their
- Co-worker
 - Superior officer
 - Both (a) and (b)
 - None
81. Which zone is the hottest part of a flame?
- Outer Zone
 - Innermost Zone
 - Middle Zone
 - All of the above

82. The greatest composition of Dry chemical powder in Fire extinguisher are composed of
- Sodium Bicarbonate and other additives
 - Methane
 - Both (a) and (b)
 - None
83. What is the responsibility of a transmission tower?
- support the heavy conductor
 - provide electrical isolations among the equipment
 - provide sufficient ground clearance
 - all of the above
84. Up to what diameter, a heavy duty rebar cutter can cut the reinforcement?
- 36 mm
 - 40 mm
 - 42 mm
 - 44 mm
85. Where should the tile polishing machine not used?
- Wet Surface
 - Dry Surface
 - Glass Surface
 - Wooden Surface
86. Standard Penetration Test result contains information about
- Moisture content
 - Specific gravity
 - Bulk Unit Weight
 - All of the above
87. When Corona occurs, which colour of light is produced around the conductor?
- Red
 - Yellow
 - Blue
 - Violet
88. If voltage of the power transmission line is increased, then associated current of this power
-
- Reduced
 - Half
 - Same
 - Four times
89. What are the duties and responsibilities of a Project Manager?
- To ensure implementation of the requirements in projects under his control.
 - To carry out detailed planning to meet contract requirements.
 - Directly responsible for the implementation and administration of Project HSE Plan and that of its sub-contractor.
 - All of the above.
90. Reviewing application for new connection, additional load/demand, etc. is done by
- CERC
 - SERC

- c. Both (a) and (b)
 - d. None of the above
91. Theft of Electricity fall under section
- a. Section 50
 - b. Section 138
 - c. Section 139
 - d. Section 140
92. A _____ is a company that has the license to distribute power to consumers at the tariff fixed by the Electricity Regulatory Commission (ERC).
- a. DISCOM
 - b. SERC
 - c. CERC
 - d. All of the above
93. The walls of the excavation shall be examined NOT to determine _____
- a. Soil classification
 - b. Angle of repose
 - c. Bearing Capacity
 - d. Meet soil encountered
94. In view of tremendous bearing strength of rock and bond strength between _____ and concrete, special type of foundation is to be designed.
- a. Reinforcement
 - b. Stub angle
 - c. Chimney
 - d. None of these
95. In India, how many percentage of cement is used in Ready Mix Concrete?
- a. 2 - 5 %
 - b. 3 - 6 %
 - c. 2 - 6 %
 - d. 3 - 5 %
96. The stubs of foundations constructed in fully submerged soil shall be painted after installation with black bituminous paint overlapping the steel / concrete interface from _____ below the top of concrete to 500 mm above.
- a. 100 mm
 - b. 150 mm
 - c. 200 mm
 - d. 250 mm
97. Which type of curing is most preferable for Hard Rock or dry fissured rock type of foundations?
- a. Covering with gunny bags
 - b. Membrane Curing
 - c. Filling Pit with water
 - d. Sprinkling of water
98. Ladders should extend at least _____ above the landing place or the highest rung to be used by the feet, unless there is other adequate hand hold.
- a. 3 feet
 - b. 3 feet 3 inches
 - c. 3 feet 6 inches
 - d. 4 feet

99. The discharge rod is used to discharge the line in order to reduce
 - a. Static induction charge
 - b. Resistance of the line
 - c. Capacitance effect
 - d. None of these
100. CEA Gazette Notification includes
 - a. Handling of electric supply lines and apparatus
 - b. Provision applicable to protective equipment
 - c. Clearances between ground and overhead line
 - d. All of the above
101. During the rain the porcelain insulators may develop
 - a. Hairline cracks
 - b. Partial discharge
 - c. Either (a) or (b)
 - d. None
102. Mouth to mouth procedure of artificial respiration should be repeated about
 - a. 10 to 12 times in a min
 - b. 30 to 32 times in a min
 - c. 50 to 52 times in a min
 - d. 1 to 2 times in a min

A. Questions for Viva

1. Why should the mixer be cleaned thoroughly at the end of concrete operation?
2. Why is Wheeled Excavator not used for uneven grounds and hilly areas?
3. What are the machineries used during the excavation of soil?
4. What is the difference between shuttering and template setting?
5. What are the structural and non-structural repairs required if there is any crack in the foundation of transmission tower?
6. What information do we get from Bar Bending Schedule?
7. Why steel shuttering is considered as the best shuttering?
8. What is the difference between OPC and PPC?
9. What precautions should be taken while mixing/laying cement concrete mix to the required site?
10. What are the methods of compaction of concrete?
11. What is revetment?
12. What is Benching? Where is benching done and why?
13. Why is Crate Stone Work performed?
14. What is Curing?
15. What are the effects of improper curing?
16. What is counter poise earthing?
17. Why coal is used in earthing?
18. Why coping is required in stubs?
19. What are the limits of earth value?
20. How much is curing time of tower foundations?
21. Why water is used by back filling of tower foundations?
22. What is benefit of using vibrator in concreting?
23. What do you mean by M20 concrete?
24. Why PCC is used at bottom of concrete?

25. Why pits are slope in nature?
26. In water logged foundations why dewatering is necessary?
27. What should be value of M20/M15/M10 concrete?
28. Minimum Curing period of concrete to attain strength is?
29. Normal ratio of concrete is?

B. More Questions

- 1 State stepwise process in excavation?
- 2 State the guidelines for a technician for performing Bar Bending Schedule?
- 3 What are the test required for concrete mixing?
- 4 Write the report to be submitted for each type of concrete mix?
- 5 What are the steps to utilize Ready Mix concrete?
- 6 Discuss the guidelines for a worker to lay cement concrete?
- 7 How can you get more strength with same quantity of cement?
- 8 What are the steps taken if there is any sign of damage in the RCC?
- 9 How are stubs repaired?
- 10 State the purpose of revetment?
- 11 What are the methods for concrete curing to attain strength?
- 12 Explain the very purpose of template?
- 13 Stubs are made of what steel?
- 14 Why tower/stubs parts are galvanized?
- 15 Why compaction during back filling is must?
- 16 Over lapping in joints of TOR IS how much?
- 17 What is minimum cover of concrete over TOR/Steel?
- 18 Why light emitting safety belts are required?
- 19 Why earthing of electrical machines is must?
- 20 Is concrete ratio is by weight or volume?
- 21 What is sieve analysis in sand and gravel?

On job training (tower foundation)

1. Prepare a test cube mould.
2. Demonstrate the use of vibrator during tower foundation.
3. Use the slump cone apparatus and measure the size of different types of concrete and prepare a report.
4. Use different types of rebar and cut bars into 3 equal pieces and check the size and differentiate the error.
5. Use rebar machine for twisting and tying of bars in a proper manner.
6. Investigate the type of soil and find the type of foundation to be adopted.
7. Demonstrate the bar bending procedure for different size of bars and in different angles prepare a record for bar bending schedule.
8. Demonstrate use of safety gadgets while working on transmission tower foundation.
9. Demonstrate safe keeping of tools and tackles.
10. Use concrete mixer and mix cement, sand and aggregate in proper ratio.
11. Construct a stub and prepare a stub setting record.
12. How to prepare a lap joint in steel bars
13. How to prepare cement coverage for steel bars

14. Demonstrate storage of cement to avoid setting/absorption of moisture.