

DE-7/2021/69

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

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Name:	Reg.No.	Signature:
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DEPARTMENTAL TESTS — JULY, 2021

Total Number of Questions : 100

[Time : 1 $\frac{1}{2}$ hours

(Maximum Marks : 100)

INSTRUCTIONS TO CANDIDATES

1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. A, B, C & D.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.
6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so the fact should be brought to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball-Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer $\frac{1}{3}$ mark will be deducted. No negative marks for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over the Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.
14. **If any candidates make a marking of answer in the question paper and exchange with other candidate during the course of the examination, the answer script will be invalidated and the candidates will be debarred for a minimum period of 2 years from appearing the Departmental Tests.**

DE-7/2021/69

Maximum : 100 marks

Time : 1½ hours

1. The management of a factory Registered under Factories Act 1948 with more than _____ KW load shall designate a person for ensuring safety provision.
(A) 150 KW (B) 250 KW
(C) 500 KW (D) 100 KW
2. Electrical Inspector is appointed by the Govt under Section _____ of the Electricity Act 2003.
(A) 161 (B) 163
(C) 162 (D) 164
3. The Electricity Act 2003 extends to the whole of India except:
(A) Union Territories (B) Jammu and Kashmir
(C) Andhra Pradesh (D) North Eastern States
4. 'Board' as referred in Electricity Act 2003 is :
(A) State Electricity Board
(B) Electricity Boards of Union Territories
(C) Central Electricity Board
(D) Licensee Other than State Electricity Boards
5. Dedicated Transmission line means :
(A) 220 kv Transmission line
(B) 400 kv line
(C) Supply line for point to point Transmission
(D) Any line to Substation
6. Distribution of Electricity in Munnor Town is done by :
(A) KSEB (B) Tata Tea
(C) KDHP (D) TNEB
7. Supply code 2014 formulated as per which Section of the Electricity Act 2003 :
(A) 50 (B) 120
(C) 161 (D) 51

A

3

[P.T.O.]

8. The appropriate Commission determine the Tariff in accordance with provision of _____ section of the Electricity Act.
- (A) 101 (B) 62
(C) 70 (D) 51
9. Provision relating to over head lines is as per _____ Section of the Electricity Act 2003.
- (A) 68 (B) 90
(C) 162 (D) 5
10. The no.of members in central Electricity Authority is:
- (A) Not more than 11 (B) Not more than 12
(C) Not more than 13 (D) Not more than 14
11. The Head Quarters of CEA is:
- (A) New Delhi (B) Bombay
(C) Calcutta (D) Chennai
12. State Electricity Regulatory Commission consists of :
- (A) Not more than 4 members (B) Not more than 3 members
(C) Not more than 5 members (D) Not more than 2 members
13. Unauthorised use of Electricity can be assessed and fixed as per _____ Section of the Electricity Act 2003 :
- (A) 50 (B) 126
(C) 150 (D) 161
14. The Danger notice with a sign of skull and bones design as per _____ IS.
- (A) 2551 (B) 3043
(C) 1088 (D) 732
15. Periodical inspection is done as per :
- (A) R.43 (B) R.30
(C) R.61 (D) R.63
16. Dept. of Electrical Inspectorate is accredited with SQMS certification as per :
- (A) IS 1008 (B) IS 13947
(C) IS I5700 (D) IS 12065
17. Extra Low Voltage mean :
- (A) < 50V (B) < 100V
(C) < 150V (D) < 5V

18. The usual Voltage rating of a 1250 HP motor :
- (A) 433V (B) 11KV
(C) 3.3KV (D) 6.6KV
19. In Transformer specification Dy n11, 11 stands for :
- (A) LV lags HV by 330° (B) LV lags HV by 30°
(C) HV lags LV by 330° (D) LV leads HV by 330°
20. In Dy 11 Transformer :
- (A) Neutral is not brought out (B) Neutral is brought out
(C) Primary is Star Connected (D) Secondary is Delta Connected
21. For designing an 11 KV substation Fault MVA at 11KV side is taken as :
- (A) 200 MVA (B) 250 MVA
(C) 500 MVA (D) 100 MVA
22. Metering P T will be :
- (A) Delta-star (B) Star-Delta
(C) Star-Star (D) Delta-Delta
23. For finding the size of an 11 KV cable the time to withstand the fault current is taken as :
- (A) 0.3 Sec (B) 1 Sec
(C) 2 Sec (D) 0.5 Sec
24. The class of 11 KV TOD meter is :
- (A) 0.25 (B) 0.2
(C) 0.5 (D) 0.55
25. The protection equipment in the HV side of Transformer :
- (A) VCB (B) ACB
(C) MCB (D) MCCB
26. As per IEC Transformer rating shall be based on :
- (A) R.5 Series (B) R.10 Series
(C) R.20 Series (D) R.40 Series
27. The maximum rating of motors connected to PDB :
- (A) 5HP (B) 20 HP
(C) 10 HP (D) 15 HP

28. Current density of Copper is taken as :
- (A) 118 A/mm² (B) 46 A/mm²
(C) 100 A/mm² (D) 72 A/mm²
29. NGR is provided in an Electrical Installation :
- (A) Reducing the Current through HT motors
(B) Easy starting of HT motors
(C) Reducing the Earth resistance
(D) Reducing the power loss in Transformer
30. For differential protection the no. of CTs provided :
- (A) 4 Nos (B) 8 Nos
(C) 5 Nos (D) 6 Nos
31. The class of CT for differential protection :
- (A) 1 (B) 5P10
(C) 5P20 (D) PS
32. Differential protection is provided for Transformers whose rating is above :
- (A) 10 MVA (B) 5 MVA
(C) 1 MVA (D) 15 MVA
33. No. of CTs used for REF protection :
- (A) 3 Nos (B) 5 Nos
(C) 6 Nos (D) 2 Nos
34. In REF protection tripping shall be :
- (A) Secondary side (B) Primary side
(C) Both Primary and Secondary (D) No tripping is required
35. The ratio of inter posing CTs used for differential protection in a Delta-Star Transformer :
- (A) 1 : U3 (B) 1 : 1
(C) U3 : 1 (D) 2 : 1
36. If 120/1 is the ratio of CTs used for differential protection in the Primary side of a 10 MVA 66/11kV Transformer the Secondary CTs shall be :
- (A) 1200/1 (B) 12/1
(C) 240/1 (D) 720/1

37. 'Appropriate Commission' as mentioned in the Electricity Act denotes :
- (A) Central Arbitration Commission
 - (B) Central Electricity Regulatory Commission
 - (C) Central Appellate Tribunal for Electricity
 - (D) Central Electricity Authority
38. The period of license granted under Section 14 of the Act, unless revoked is :
- (A) Twenty Five Years
 - (B) Thirty Years
 - (C) Twenty Years
 - (D) Ten Years
39. 'Wheeling' as mentioned in the Electricity Act 2003 :
- (A) Sharing of Power between Two Licensees
 - (B) Licensee undertaking Trading in Electricity
 - (C) Operation of distribution systems facilities of a Licensee by another person on payment of charges
 - (D) Convey ones of Electricity by means of Transmission lines of Two Licensees
40. An Electrical Inspector holding enquiry into an Electrical Accident shall have all powers of a Civil Court as per the provisions of The Electricity Act 2003 under Section :
- (A) 161
 - (B) 113
 - (C) 48
 - (D) 50
41. Neutral point of Every Generator shall be earthed :
- (A) Minimum One Earth Connection
 - (B) Minimum Three Earth Connection
 - (C) Minimum Two Separate Earthing
 - (D) No Earthing
42. Horizontal required for an 11KV overhead line with the nearby Building :
- (A) 3.7 M
 - (B) 1.2 M
 - (C) 2 M
 - (D) 3 M

43. For fire Pumps in High rise Building :
- (A) Starters shall be provided
 - (B) Starters shall not be provided
 - (C) Starters with over load protection shall be provided
 - (D) Starters without overload protection
44. Distance between Pipe Electrodes :
- (A) 8 m
 - (B) 5 m
 - (C) 10 m
 - (D) 2 m
45. Distance between Plate Electrodes :
- (A) 8 m
 - (B) 5 m
 - (C) 10 m
 - (D) 2 m
46. Headroom clearance of an Indoor Transformer :
- (A) 1 m
 - (B) 1.5 m
 - (C) 50 cm
 - (D) 75 cm
47. USS means :
- (A) Uninterrupted Supply System
 - (B) Universal Supply Source
 - (C) Unified Supply System
 - (D) Unitised Sub Station
48. FBA denotes :
- (A) Factory Built Accessories
 - (B) Factory Built Assembly
 - (C) Federal Bureau of Accessories
 - (D) Fire Built Accident
49. Minimum thickness of Brick wall for the fire wall between two Transformers :
- (A) 20 cm
 - (B) 50 cm
 - (C) 30 cm
 - (D) 45 cm
50. Maximum rating of an 11KV/433V Transformer :
- (A) 1 MVA
 - (B) 3 MVA
 - (C) 2 MVA
 - (D) 5 MVA

51. The permissible voltage variation for low and medium voltage distribution :
- (A) $\pm 3\%$ (B) $\pm 5\%$
(C) $\pm 10\%$ (D) $\pm 6\%$
52. A circuit Breaker is required on the Primary Side of the Transformer having capacity – KVA and above :
- (A) 500 (B) 1600
(C) 2000 (D) 1000
53. Regulation 36 of CEA (MRS and ES) Regulator 2010 stands for :
- (A) Generator Installation (B) High rise Building
(C) HT Installation (D) X-ray Installation
54. Minimum Clearance required in front of Switch Board :
- (A) 50 cm (B) 1.5 m
(C) 1 m (D) 2 m
55. Differential Protection shall be given to Transformer having capacity _____ MVA and above.
- (A) 1 MVA (B) 5 MVA
(C) 15 MVA (D) 10 MVA
56. The Ground Clearance of an 11KV line along the street :
- (A) 5.5 m (B) 5.8 m
(C) 6 m (D) 6.2 m
57. The vertical clearance of 33KV line above the Building is :
- (A) 3.5 m (B) 3.6 m
(C) 3.7 m (D) 3.8 m
58. The Horizontal Clearance between Building and LT line :
- (A) 1.2 m (B) 1 m
(C) 2 m (D) 1.5 m

59. Minimum size of 11 KV jumper in a Transformer Station is :
- (A) No 8 Copper (B) No 0 Copper
(C) No 10 Copper (D) No 6 Copper
60. Minimum Size of 11KV cable of the Transformer if no Back up fuse is provided :
- (A) 300 mm² (B) 185 mm²
(C) 150 mm² (D) 70 mm²
61. Which Regulation insists that every person who is working on an Electric line shall be provided with safety Devices?
- (A) 19 (B) 18
(C) 43 (D) 31
62. Winding and Oil Temperature Protection with Alarm and trip shall be provided in Transformer with rating :
- (A) 2 MVA (B) 1 MVA and above
(C) 3 MVA and above (D) 5 MVA and above
63. What does the Device 27 denotes?
- (A) Over voltage relay (B) Over Current relay
(C) Under voltage relay (D) REF relay
64. The class of CTs of REF protection :
- (A) 1 (B) 5 P10
(C) 5 P20 (D) PS
65. The minimum vertical clearance required for a Building under 66 KV line :
- (A) 4 m (B) 5 m
(C) 6 m (D) 4.5 m
66. Minimum Size of 11KV jumper :
- (A) 25 × 3 Copper (B) 0 Copper
(C) 14 SWG (D) 25 × 6 Copper
67. In lightning protection minimum Horizontal distance between conductor is :
- (A) 10 m (B) 5 m
(C) 8 m (D) 9 m

68. Maximum rating of a charge over Switch :
- (A) 800 A (B) 630 A
(C) 500 A (D) 400 A
69. The composite Error of a 5P10 15VA CT is :
- (A) 15 (B) 5
(C) 10 (D) 50
70. The Base Area of a structure is 800 Sq mm. The number of down conductors for lightning protection are :
- (A) 3 (B) 2
(C) 4 (D) 5
71. Which relay is most essential when two Generation are operated in parallel?
- (A) Over Voltage relay (B) Differential relay
(C) Oil Surge relay (D) Reverse power relay
72. When two generators operate in parallel and neutral switching is adopted inter locks shall be provided to ensure that Generator Breaker cannot be closed unless :
- (A) One of the neutrals connected to Earth
(B) Neutrals of both Generators connected to Earth
(C) Neutrals are disconnected from Earth
(D) Voltages are same for both Generation
73. Which relay should be used for Transformer having OLTC?
- (A) Over current relay (B) Over voltage relay
(C) Reverse power relay (D) Earth fault relay
74. Which is not a Electricity Supply Licensee in Kerala?
- (A) Techno park Thiruvananthapuram (B) KDHP Munnar
(C) Kozhikode Corporation (D) KINESCO Kochi
75. The Secondary Side Voltage of a PT provided for 11 kv measurement is:
- (A) 110 V (B) 150 V
(C) 220 V (D) 440 V

76. The Accounts of Central Electricity Regulatory Commission are audited by :
- (A) Accountant General of India
 (B) Reserve Bank
 (C) Comptroller and Auditor General of India
 (D) Chair Person of CEA
77. SWG Denotes :
- (A) Switch and wire Gadget (B) Standard wire Gauge
 (C) Switch with Ground (D) Standard wire Gadget
78. HRC denotes :
- (A) High Rise Circuit (B) Heavy Rigid Conductor
 (C) High Repturing Capacity (D) Heavy Resistant compound
79. 1 HP equals:
- (A) 0.85 KW (B) 0.33 KW
 (C) 0.745 KW (D) 1.1 KW
80. Local Isolation shall be provided for motors within _____ meters.
- (A) 3 m (B) 2 m
 (C) 1 m (D) 4 m
81. Minimum Height of Emergency Switch above Ground level in meters :
- (A) 2 m (B) 3 m
 (C) 2.44 m (D) 1.8 m
82. Maximum Contract demand of 11 KV voltage :
- (A) 2 MVA (B) 1 MVA
 (C) 3 MVA (D) 5 MVA
83. Maximum Contract demand of 33 KV voltage :
- (A) 3 MVA (B) 12 MVA
 (C) 15 MVA (D) 10 MVA
84. Maximum Contract demand of 66 KV voltage :
- (A) 15 MVA (B) 18 MVA
 (C) 25 MVA (D) 20 MVA
85. Minimum size of Earth wire for Earthing of motors :
- (A) 8 SWG (B) 14 SWG
 (C) 12 SWG (D) 16 SWG

86. HT/EHT consumers shall install stepdown Transformer at their premises with a vector group :
- (A) Star-Star (B) Delta-Delta
(C) Star-Delta (D) Delta-Star
87. Plate Electrodes are used when fault current exceeds :
- (A) 10 KA (B) 12 KA
(C) 6 KA (D) 2 KA
88. Maximum Earth resistance in HT premises :
- (A) 5 Ohm (B) 2 Ohm
(C) 3 Ohm (D) 1 Ohm
89. Only dry type transformers shall be used in :
- (A) HT installation (B) Generating stations
(C) Public places (D) Residential Building
90. In Hotels Isolation Transformer shall be use for giving Supply to :
- (A) Kitchen (B) Rooms
(C) Auditorium (D) Swimming Pool
91. Polarisation Index shall be :
- (A) < 1 (B) < 1.5
(C) > 1.5 (D) > 1
92. Duration of fault current for Earthing design :
- (A) 1 Sec (B) 100 ms
(C) 1 ms (D) 3 Sec
93. The Danger notice sign with skull and Bone is as per IS :
- (A) 3043 (B) 1088
(C) 732 (D) 2551

94. Stand by low set Earth fault relay shall be provided for Generation having rating :
- (A) ≥ 160 KVA (B) ≥ 200 KVA
(C) ≥ 100 KVA (D) ≥ 25 KVA
95. The code letter for XLPE insulation :
- (A) W (B) X
(C) XL (D) 2 X
96. Minimum depth of cable for MV cables :
- (A) 1 m (B) 1.5 m
(C) 2 m (D) 75 cm
97. Phase to phase clearance in MV panel :
- (A) 25 mm (B) 15 mm
(C) 20 mm (D) 30 mm
98. Minimum IR value of 11KV/433V Oil filled Transformer :
- (A) 500 m Ω (B) 250 m Ω
(C) 100 m Ω (D) 300 m Ω
99. Earth switch provided in HTSFU is for Earthing :
- (A) Body of HTSFU (B) Body of Transformer
(C) Outgoing side (D) Incoming side
100. Power and functions of Electrical Inspectors are under Electricity Act 2003 in Sector :
- (A) 161 (B) 163
(C) 12 (D) 162

SPACE FOR ROUGH WORK

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