MPSC Assistant Engineer EE Mains 2018 - Paper 2

महाराष्ट्र अभियांत्रिकी सेवा (विद्युत) (मुख्य) परीक्षा - 2018
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प्रश्नपुस्तिका क्रमांक
BOOKLET No.

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2018

प्रश्नपुस्तिका-II **J12** संच क्र. **A**

विद्युत अभियांत्रिकी पेपर – 2

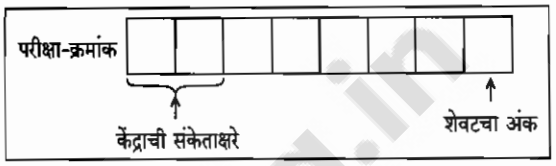
वेळ : 2 (दोन) तास

एकूण प्रश्न : 100
एकूण गुण : 200

सूचना

(1) सदर प्रश्नपुस्तिकेत **100** अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.

(2) आपला परीक्षा-क्रमांक ह्या चौकोनांत **न विसरता बॉलपेनने** लिहावा.



(3) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जागी उत्तरपत्रिकेवरील सूचनेप्रमाणे **न विसरता नमूद करावा.**

(4) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला 4 पर्यायी उत्तरे सुचविली असून त्यांना 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. त्या चार उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरपत्रिकेवरील सूचनेप्रमाणे तुमच्या उत्तरपत्रिकेवर नमूद करावा. अशा प्रकारे उत्तरपत्रिकेवर उत्तरक्रमांक नमूद करताना तो संबंधित प्रश्नक्रमांकासमोर छायांकित करून दर्शविला जाईल याची काळजी घ्यावी. **ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल** वा शाईचे पेन **वापरू नये.**

(5) सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्रश्नांची उत्तरे द्यावीत. घाईमुळे चुका होणार नाहीत याची दक्षता घेऊनच शक्य तितक्या वेगाने प्रश्न सोडवावेत. क्रमाने प्रश्न सोडविणे श्रेयस्कर आहे पण **एखादा प्रश्न कठीण वाटल्यास त्यावर वेळ न घालविता पुढील प्रश्नांकडे वळावे.** अशा प्रकारे शेवटच्या प्रश्नापर्यंत पोहोचल्यानंतर वेळ शिल्लक राहिल्यास कठीण म्हणून वगळलेल्या प्रश्नांकडे परतणे सोईस्कर ठरेल.

(6) उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही.

(7) **प्रस्तुत परीक्षेच्या उत्तरपत्रिकांचे मूल्यांकन करताना उमेदवाराच्या उत्तरपत्रिकेतील योग्य उत्तरांनाच गुण दिले जातील. तसेच ''उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स्वरूपाच्या प्रश्नांची दिलेल्या चार उत्तरांपैकी सर्वात योग्य उत्तरेच उत्तरपत्रिकेत नमूद करावीत. अन्यथा त्यांच्या उत्तरपत्रिकेत सोडविलेल्या प्रत्येक चार चुकीच्या उत्तरांसाठी एका प्रश्नाचे गुण वजा करण्यात येतील''.**

(8) (अ) प्रस्तुत परीक्षेसाठी Non-programmable Scientific calculator वापरण्यास परवानगी आहे.
(ब) उमेदवाराने परीक्षा कक्षात आणलेल्या calculator चा सिरीज क्रमांक हजेरीपटावर नमूद करावा.
(स) उमेदवाराने परीक्षेत programmable calculator वापरल्याचे आढळल्यास त्याची उमेदवारी रद्द करण्यात येईल.

पर्यवेक्षकांच्या सूचनेविना हे सील उघडू नये

ताकीद

ह्या प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपेपर्यंत ही प्रश्नपुस्तिका आयोगाची मालमत्ता असून ती परीक्षाकक्षात उमेदवाराला परीक्षेसाठी वापरण्यास देण्यात येत आहे. ही वेळ संपेपर्यंत सदर प्रश्नपुस्तिकेची प्रत/प्रती, किंवा सदर प्रश्नपुस्तिकेतील काही आशय कोणत्याही स्वरूपात प्रत्यक्ष वा अप्रत्यक्षपणे कोणत्याही व्यक्तीस पुरविणे, तसेच प्रसिद्ध करणे हा गुन्हा असून अशी कृती करणाऱ्या व्यक्तीवर शासनाने जारी केलेल्या ''परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचा अधिनियम-82'' यातील तरतुदीनुसार तसेच प्रचलित कायद्याच्या तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

तसेच ह्या प्रश्नपत्रिकेसाठी विहित केलेली वेळ संपण्याआधी ही प्रश्नपुस्तिका अनधिकृतपणे बाळगणे हा सुद्धा गुन्हा असून तसे करणारी व्यक्ती आयोगाच्या कर्मचारीवृंदापैकी, तसेच परीक्षेच्या पर्यवेक्षकीयवृंदापैकी असली तरीही अशा व्यक्तीविरूद्ध उक्त अधिनियमानुसार कारवाई करण्यात येईल व दोषी व्यक्ती शिक्षेस पात्र होईल.

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा

कच्च्या कामासाठी जागा/SPACE FOR ROUGH WORK

1. Directional overcurrent relay is used for the protection of

(1) long transmission lines (2) large power transformers

(3) ring main distribution lines (4) radial distribution lines

2. Differential relays are used for protection of equipment against

(1) internal faults (2) over current

(3) reverse current (4) reverse power

3. Over conventional electromechanical relays, the static relays have the advantages of

(1) low power consumption, less maintenance and greater sensitivity

(2) compact size and quick operation

(3) wide range of characteristics approaching more or less to ideal requirement

(4) All of the above

4. Magnetizing inrush current in a transformer is rich in

(1) 3^{rd} harmonic component

(2) 5^{th} harmonic component

(3) 2^{nd} harmonic component

(4) All odd harmonic components

5. Which of the following should have low value for main contacts in LV switching devices ?

(1) Thermal capacity

(2) Contact resistance

(3) Thermal conductivity

(4) None of the above

6. Buchholz relay is most essential for protection against

(1) HT and LT fault

(2) earth fault

(3) inter-turn fault

(4) LT fault

7. The magnetising inrush current in an unloaded transformer is maximum when the switch is closed and the voltage is passing through

(1) zero

(2) positive maximum

(3) negative maximum

(4) Both (2) and (3)

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8. The magnetising current in transformer caused due to over-voltage is rich in

(1) 2^{nd} harmonic component

(2) 3^{rd} harmonic component

(3) 5^{th} harmonic component

(4) Both (1) and (2)

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9. In case of short-tie-line fed at both the ends, for protection

(1) reactance relay is the best choice

(2) ohm relay is the best choice

(3) mho relay is the best choice

(4) Both (1) and (3)

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10. With reference to the problem of power system swings for protection of EHV lines

(1) mho relay with characteristic angle of 75° is the best choice

(2) mho relay with characteristic angle of 60° is the best choice

(3) reactance relay is the best choice

(4) impedance relay is the best choice

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

11. Fault location in an HV cable is done by
(1) Voltage withstand test
(2) Partial discharge scanning tests
(3) Life tests
(4) Impulse testing

12. Short-circuit ratio of an HVDC grid is
(1) DC power flow/kVA
(2) AC MVA/DC MW
(3) Voltage/Current at the short-circuit point
(4) Short-circuit MVA at converter bus rated DC power MW

13. Time to front of an impulse voltage waveform is defined as
(1) 1·25 times the interval between 0·1 to 0·9 of peak value
(2) time interval between 0·1 to 0·9 of peak value
(3) 1·67 times the interval between 0·1 to 0·9 of peak value
(4) 1·25 times the interval between 0·3 to 0·9 of peak value

14. IEC 61000–4–15 defines the methodology and specification of instrumentation for
(1) measuring flicker
(2) THD
(3) power frequency variation
(4) All of the above

15. The purpose of insulation coordination is to
(1) limit the over voltages
(2) protect the electrical apparatus against over voltage
(3) grade the insulation of different power apparatus and overhead lines such that the least important apparatus fails first and the most important one is protected to the highest level
(4) None of the above

16. Series capacitive compensation in EHV transmission lines is used to

(1) reduce the line loading

(2) improve the stability of the system

(3) reduce the voltage profile

(4) improve the protection of the line

17. The most accurate and versatile method of achieving reactive power compensation is by using

(1) Switched capacitors

(2) Fixed capacitor with controlled reactor

(3) Saturable reactor with capacitor bank

(4) Switched capacitor with controlled reactors

18. Which of the following is a type test for transformers ?

(1) Temperature rise test

(2) Lightning impulse test

(3) Partial discharge test

(4) All of the above

19. Voltage dips ***cannot*** be caused by which of the following ?

(1) Inductive loading

(2) Switching on/off large loads

(3) Capacitive switching

(4) Local and Remote faults

20. When a supply voltage has been zero for a period of time in excess of 1 minute, the long duration voltage variation is considered as

(1) Sustained interruption

(2) Long-term dip

(3) Long-term sag

(4) None of the above

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

21. Power factor of saw mill is about
(1) 0·5 (2) 0·8
(3) 0·1 (4) 0·9

22. Which is the alternate method for electrical energy conservation ?
(1) Use of Solar Energy
(2) Windmill Generator Set
(3) Tidal Energy
(4) All of the above

23. Improvement in power factor results in
(1) Change in kW (2) Reduction in voltage
(3) Reduction in losses (4) Change in frequency

24. As per the 'Indian Electricity Act', the HT consumer should maintain p.f. in between
(1) 0·6 to 0·8 (2) 0·8 to 0·85
(3) 0·9 to 0·99 (4) Above unity

25. In induction motors, low power factor is due to
(1) Low load (2) High load
(3) Overload (4) None of the above

26. The objective/s of electrical energy conservation audit is/are to
(1) Find losses
(2) Make optimum use of distribution transformers
(3) Suggest alternate ways for electricity sources
(4) All of the above

27. Disadvantage of low power factor is
(1) Large kW rating
(2) High power factor
(3) Large kVA rating
(4) None of the above

28. Which are the conventional ways for generation of electricity in India ?
(1) Hydroelectric generation station (2) Thermal power station
(3) Tidal energy generation (4) Both (1) and (2)

29. Power factor is increased by

(1) Series capacitor

(2) Capacitor in parallel to load

(3) Under excited synchronous motor

(4) All of the above

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30. A consumer is taking load of 20 kW at power factor of 0·8 lagging. Find the rating of capacitor to raise the power factor to 0·95.

(1) 9·43 kVAR (2) 8·43 kVAR

(3) 7·53 kVAR (4) 6·43 kVAR

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31. Relative sensitivity of eye is maximum at which of the following wavelengths in Å ?

(1) 4000 (2) 1500

(3) 5500 (4) 8500

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32. _____ type of lamp ***cannot*** sustain much voltage fluctuations.

(1) Sodium vapour

(2) Mercury vapour

(3) Incandescent

(4) Fluoroscent

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33. Variation in lumens per watt with change in voltage from 0 to 120%

(1) increases as voltage increases

(2) decreases as voltage increase

(3) No change

(4) decreases and then increases

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34. A sodium vapour lamp consists of an inner bulb of special glass containing the sodium and inert gas at a pressure of _____ Hg.

(1) 1·5 mm (2) 1·8 mm

(3) 2·5 mm (4) 3·5 mm

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

35. Which of the following lamps has the highest efficiency (lumens/watt) ?

(1) Filament lamp

(2) Mercury vapour lamp

(3) Metal halide lamp

(4) Sodium vapour lamp

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36. The lamp efficacy (lumens/watt) of CFL is

(1) 70 (2) 90

(3) 45 (4) 80

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37. Operating temperature of inner tube of sodium vapour lamp in °C is around

(1) 400 (2) 500

(3) 800 (4) 300

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38. 'Glare' is reduced by

(1) Using diffusers

(2) Increasing the height of lamp

(3) Using reflectors to cut off the light at certain angle

(4) All of the above

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39. When light travels from one material to another

(1) Velocity changes but not the angle

(2) Velocity and angle both change

(3) Angle changes but not velocity

(4) Nothing changes

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40. For precision work the illumination level required is of the order of

(1) 500 to 1000 lumens/m^2

(2) 50 to 100 lumens/m^2

(3) 200 to 400 lumens/m^2

(4) 10 to 25 lumens/m^2

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41. What are the main parts of a DG Set ?
(1) Engine only
(2) Alternator only
(3) Engine – Alternator
(4) Engine – Alternator – Exciter

42. Synchronous speed is calculated by a formula
(1) $N_s = \frac{120\ f}{p}$
(2) $N_s = \frac{120\ p}{f}$
(3) $N_s = \frac{240\ f}{p}$
(4) None of the above

43. A normal DG Set must be CPCB compliant for noise as below :
(1) 75 dB at 1 metre
(2) 80 dB at 1 metre
(3) 85 dB at 1 metre
(4) 90 dB at 1 metre

44. The radiator of engine of a DG Set is filled with
(1) Normal water only
(2) Coolant only
(3) Coolant and normal water
(4) None of the above

45. The efficiency of a DG Set ranges between
(1) 20 to 25%
(2) 0 to 20%
(3) 40 to 45%
(4) 60 to 70%

46. If A is cross-sectional area of conductor, the Bus-bar temperature rise in a DG Set is proportional to
(1) A
(2) $1/A^2$
(3) A^2
(4) A^3

47. Bus bar temperature rise in a DG Set is proportional to
(1) Current (I)
(2) Square of current (I^2)
(3) Voltage (V)
(4) All of the above

48. In a DG Set, bus-bar experiences
(1) thermal stress
(2) electromagnetic stress
(3) Both (1) and (2)
(4) None of the above

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

49. While synchronising the DG Set with the utility grid, which of the condition(s) must be satisfied ?

(1) Voltage of DG Set must be same with the utility grid.

(2) Phase sequence must be same with the utility grid.

(3) Frequency must be same with the utility grid.

(4) All (1), (2) and (3) must be satisfied.

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50. Which Indian standard is related to alternating current generator driven by internal combustion engine ?

(1) IS 13364 (2) IS 3046

(3) IS 15564 (4) IS 7026

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51. Which factor is considered while selecting motor drive for pump set ?

(1) Electrical characteristics (2) Mechanical characteristics

(3) Both (1) and (2) (4) None of the above

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52. The maximum synchronous speed in India is

(1) 1500 rpm (2) 3000 rpm

(3) 1440 rpm (4) 1000 rpm

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53. For maximum torque which motor is ***not*** suitable ?

(1) D.C. Series motor

(2) D.C. Compound motor

(3) Slip-Ring I.M.

(4) Resistance Split phase motor

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54. For a 4 pole, 50 Hz I.M. running at a speed of 1440 rpm, the slip is

(1) 4% (2) 3% (3) 2% (4) 1%

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55. Which class of duty is used for centrifugal pumps ?

(1) Short duty

(2) Continuous duty

(3) Intermittent duty

(4) None of the above

कच्च्या कामासाठी जागा / **SPACE FOR ROUGH WORK**

56. In a fan, air pressure increases up to about

(1) 20% (2) 30% (3) 10% (4) 5%

57. Axial flow fans are

(1) Tube axial (2) Vane axial

(3) Propeller (4) All of the above

58. The relation between static pressure and air flow rate, in case of fans is

(1) Linear (2) Non-Linear

(3) Arbitrary (4) None of the above

59. Variable Speed Drive (VSD) for fan application improves

(1) efficiency of the system (2) performance of the system

(3) energy saving in significant time (4) All of the above

60. In fans, power (P) is related to speed (N) by relation

(1) $P \propto N$ (2) $P \propto N^2$ (3) $P \propto N^3$ (4) None of the above

61. Which of the following sentences are ***true*** ?

a. R-12 is not used due to ozone depletion problem.

b. R-13 is not preferred for blood storage at as low as – 90°C.

c. R-21 is suitable for automobile air-conditioning.

d. R-22 is the most widely used refrigerant for large central air-conditioning installations.

Answer Options :

(1) Only a and b are true (2) Only a, c and d are true

(3) All a, b, c and d are true (4) Only b, c and d are true

62. During a refrigeration cycle, heat is rejected by the refrigerant in a

(1) compressor (2) evaporator (3) condenser (4) expansion valve

63. In a split unit of an air-conditioner, which of the following components is placed in the outdoor unit ?

(1) Evaporation coil (2) Compressor and condenser

(3) Capillary tube (4) Air filter

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

64. Which of the following refrigerants has the lowest freezing point ?
(1) Ammonia (2) R-11 (3) R-12 (4) R-22

65. Some chlorinated fluorocarbon refrigerants may decompose into a toxic irritating gas under which of the following conditions ?
(1) Allowed to mix with compressor oil
(2) Exposed to an open flame or hot surface
(3) Stored at temperature below 60° F
(4) Charged into a system having copper fittings

66. In a multi-stage vapour compression refrigeration system, which of the following options is ***false*** as compared to single stage compression ?
(1) The work of compression is increased
(2) Volumetric efficiency increases
(3) Leakages across piston are reduced
(4) Lighter flywheel is required

67. If a refrigeration compressor using a thermostat as a primary controller is running continuously without significantly lowering the temperature in the refrigerated space, which of the following is most likely the trouble ?
(1) A shortage of compressor oil (2) A shortage of refrigerant
(3) Warm food in the refrigerator (4) Excessive condenser cooling water

68. Which of the following are used as throttling devices ?
(1) Capillary tube (2) Constant pressure expansion valve
(3) Thermostatic expansion valve (4) All of the above

69. Which of the following is ***not*** the field of application of refrigeration for Brine solutions ?
(1) Dairies and Food Processing (2) Domestic Air-conditioning
(3) Ice Plants (4) Chemical Plants

70. The amount of water vapour per unit volume of the gas is called
(1) Absolute humidity (2) Relative humidity
(3) Humidity ratio (4) Degree of saturation

71. The insulation resistance of a 2 km long cable is 150 MΩ. For a length of 20 km, the insulation resistance will be

(1) 1500 MΩ (2) 15 MΩ

(3) 1·5 MΩ (4) 150 MΩ

72. In spite of some limitations, cables are preferred over the transmission lines where

(1) Public safety is involved

(2) Scenic beauty of city is important

(3) Submarine crossing is there

(4) All of the above

73. Calculate the increase in resistance and weight due to spiraling of the conductor having diameter of each strand of 2 cm and number of layers excluding central strand is one. Lay length is 40 cm.

(1) 9·9% (2) 8·9% (3) 9·8% (4) 9·5%

74. For reducing tower footing resistance, it is better to employ

(1) Chemical and counterpoise

(2) Chemical and ground rods

(3) Ground rods and counterpoise

(4) Chemical, ground rods and counterpoise

75. Cross-linked Polyethylene (XLPE) cable has

(1) good impulse dielectric strength

(2) inert to chemical reaction

(3) high-thermal dissipation property

(4) All of the above

76. Normally, _____ material is used as armouring.

(1) magnetic

(2) non-magnetic

(3) laminated

(4) None of the above

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

77. The advantages of neutral grounding are

(1) voltages of the phases are limited to phase to ground voltages.

(2) the high voltages due to transient line to ground faults are eliminated.

(3) the over-voltages due to lightning are discharged to ground.

(4) All of the above

---

78. A single core cable has a conductor of diameter 3 cm and inside diameter of lead sheath is 6 cm. If the cable is designed for operating voltage of 33 kV (line to neutral), find optimal value of conductor radius for the smallest value of the maximum stress.

(1) 39·90 kV/cm

(2) 29·90 kV/cm

(3) 35·08 kV/cm

(4) 19·90 kV/cm

---

79. Grading of cable is performed in order to achieve

a. uniform stress

b. reduction in quantity of insulation

c. reduction in quality of insulation

Answer Options :

(1) a and b only

(2) b only

(3) a and c only

(4) b and c only

---

80. A system is said to be effectively grounded only if R_o / X_1 and X_o / X_1 are respectively _____ . (Symbols have their usual meaning)

(1) ≤ 1 and ≤ 3

(2) ≥ 1 and ≥ 3

(3) ≤ 2 and ≥ 2

(4) ≥ 2 and ≤ 2

---

81. Two types of earthings are provided viz. equipment earthing and neutral point earthing. Equipment earthing is mainly provided for

(1) safety of equipment

(2) safety of operating personnel

(3) safety of starters and cables

(4) None of the above

---

82. The voltage rating of circuit breaker is normally from _____ times more than the normal operating voltage.

(1) 1·05 – 1·10

(2) 1·10 – 1·15

(3) 1·15 – 1·20

(4) 1·20 – 1·50

---

83. Step potential and touch potential is associated with

(1) High voltage transmission

(2) Earthing of substation

(3) Voltage rise in generator

(4) Communication system

---

84. The type of fire extinguisher to put out an electrical fire is

(1) Class A (2) Class B

(3) Class C (4) Class D

---

85. Determine the value of inductance of arc suppressor coil to be connected between the neutral and ground to neutralize the charging current of overhead line having the line to ground capacitance equal to 0·2 μF. If the supply frequency is 50 Hz and the operating voltage is 132 kV, find the kVA rating of the coil.

(1) 16·89 H, $1·095 \times 10^3$ kVA

(2) 20·89 H, $1·095 \times 10^3$ kVA

(3) 16·89 mH, $3·095 \times 10^3$ kVA

(4) 16·89 μH, $1·095 \times 10^3$ kVA

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

86. In a high voltage sub-station, a common method for obtaining a low ground resistance is to use

(1) interconnected ground grid

(2) counterpoise wire

(3) rod gap

(4) None of the above

87. The following is/are generally provided with limit switch to prevent motion beyond preset limit :

(1) Hoists

(2) Conveyors

(3) Machine tables

(4) All of the above

88. Lightning arrester is normally connected between _____ at the substation.

(1) phase and phase

(2) phase and ground

(3) Both (1) and (2)

(4) None of the above

89. To limit the line charging current, long distance EHV lines are connected with _____ at both ends.

(1) capacitors

(2) line reactors

(3) lightning arrester

(4) None of the above

90. Two lamps 100 W and 40 W are connected in series across 230 V, AC supply. Which of the following statements is correct ?

(1) 100 W lamp will glow brighter

(2) 40 W lamp will glow brighter

(3) Both the lamps will glow equally bright

(4) 40 W lamp will fuse

91. The recovery of dielectric strength after the arc interruption in SF_6 circuit breaker is very fast due to the

a. non-toxic property of SF_6 gas

b. non-inflammable property of SF_6 gas

c. inert nature of SF_6 gas

d. electronegative property of SF_6 gas

Answer Options :

(1) a and b only (2) b, c and d only

(3) d only (4) a and d only

---

92. Vacuum circuit breakers are used for applications of up to a voltage level of

a. 132 kV

b. 220 kV

c. 66 kV

d. 400 kV

Answer Options :

(1) c only (2) b only

(3) b and a only (4) b and d only

---

93. The circuit breaker preferred in recent times for voltage levels of 132 kV – 765 kV is a/an

(1) vacuum circuit breaker

(2) minimum oil circuit breaker

(3) air-blast circuit breaker

(4) SF_6 circuit breaker

---

94. The most suitable circuit breaker for having autorecloser is a/an

(1) minimum oil circuit breaker

(2) air-blast circuit breaker

(3) vacuum circuit breaker

(4) SF_6 circuit breaker

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

95. With reference to criteria of occupying lesser floor area, the isolator preferred is of

(1) three-post, centre post rotating, double break type

(2) pantograph type

(3) two-post, single break type

(4) All of the above

---

96. Resistance switching is normally employed in

(1) all circuit breakers (2) bulk oil breakers

(3) minimum oil breakers (4) air blast breakers

---

97. Current rating is ***not*** necessary in case of

(1) isolators

(2) circuit breakers

(3) load break switches

(4) circuit breakers and load break switches

---

98. A 3-phase circuit breaker is rated at 3300 MVA, 33 kV. Its making current will be

(1) $100/\sqrt{3}$ kA (2) 100 kA

(3) $255/\sqrt{3}$ kA (4) 255 kA

---

99. SF_6 circuit breakers have the advantages of

(1) very much reduced electrical clearance and minimum current chopping problem

(2) no reduction in dielectric strength

(3) performance independent of ambient conditions

(4) All of the above

---

100. Magnetic blow out coils are generally used in

(1) air blast circuit breaker

(2) oil circuit breaker

(3) vacuum circuit breaker

(4) air break circuit breaker

सूचना – (पृष्ठ 1 वरून पुढे.....)

(9) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या ''परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82'' यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

(10) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वत:बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. **मात्र परीक्षाकक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत करणे आवश्यक आहे.**

नमुना प्रश्न

Pick out the correct word to fill in the blank :

Q. No. 201. I congratulate you _____ your grand success.

(1) for (2) at

(3) on (4) about

ह्या प्रश्नाचे योग्य उत्तर ''(3) on'' असे आहे. त्यामुळे या प्रश्नाचे उत्तर ''(3)'' होईल. यास्तव खालीलप्रमाणे प्रश्न क्र. 201 समोरील उत्तर-क्रमांक ''(3)'' हे वर्तुळ पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.

प्र. क्र. 201. ① ② ● ④

अशा पद्धतीने प्रस्तुत प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाचा तुमचा उत्तरक्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरविलेल्या उत्तरपत्रिकेवरील त्या त्या प्रश्नक्रमांकासमोरील संबंधित वर्तुळ पूर्णपणे छायांकित करून दाखवावा. **ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.**

कच्च्या कामासाठी जागा/SPACE FOR ROUGH WORK