



BARODA PRODUCTIVITY COUNCIL
(An ISO 9001 : 2008 Organization)



Vidhyut Sahayak – Jr. Engineer (Electrical)
(Paper No.: BPC 160616)

Date: 12.06.2016; Sunday

Time: 11:30 AM to 1:30 PM

Total Marks : 100

QUESTION BOOKLET CODE : A

Seat No. : _____

Name of the Candidate: _____

Instructions to Candidates:

1. Use OMR sheet for Answering Questions. Use Blue/Black Ball pen. Use of Pencil is strictly prohibited.
2. Each question carries 1 mark. There is no negative marking.
3. Inside cover page of Question Booklet is to be used for Rough work only.
4. Please ensure before writing that your question Booklet carries 100 questions.
5. Candidate found using unfair means of any sort shall be disqualified.
6. Verify all the filled entries on OMR sheet i.e. Seat No., Question Booklet Code, Name, Category, Gender, Candidate's Signature, and Invigilator's Signature before submitting Question Booklet and OMR Sheet.
7. Submit the Question Booklet along with OMR sheet separately before leaving the examination hall.
8. Electronic Device / Mobile calculation / Cell phone / Pager / Log / Tablets / Trigonometric and slide ruler are prohibited to carry inside the Examination Centre, only calculator is allowed.



Please read the instructions carefully before attending the Question paper. All Questions are compulsory.

ROUGH WORK

Specimen Copy

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Vidhyut Sahayak - Junior Engineer (Electrical)

1. The following formula is correct:
 - (A) Load factor=Average load for a period / Peak load for the same period
 - (B) Load factor=Average load for a period x Peak load for the same period
 - (C) Load factor=Average load for a period + Peak load for the same period
 - (D) All of the above
2. In a transformer the energy is conveyed from primary to secondary
 - (A) Through cooling coil
 - (B) Through air
 - (C) By the flux
 - (D) None of the above
3. Efficiency of a power transformer is of the order of :
 - (A) 100%
 - (B) 98%
 - (C) 50%
 - (D) 25%
4. A 100-watt light bulb turned on for 8 hours uses :
 - (A) 800 Wh
 - (B) 0.8 kWh
 - (C) 8 kWh
 - (D) None of the above
5. As per Electricity Act, _____ means any line which is used for carrying electricity for any purpose.
 - (A) Electric line
 - (B) Transmission line
 - (C) All of the above
 - (D) None of the above
6. The problematic pollutants in emission of coal based generating plants _____.
 - (A) SO₂
 - (B) NO_x
 - (C) CO
 - (D) All of the above
7. For a 66 kV line having span of 200 meters between towers the approximate sag will be 2 m. If the span is double the sag will be:
 - (A) 1 m
 - (B) 2 m
 - (C) 4m
 - (D) 8m
8. A _____ is used to measure the stator % winding temperature of the generator.
 - (A) Thermocouple
 - (B) Pyrometer
 - (C) Resistance thermometer
 - (D) Thermometer

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9. If 3000 kW power is to be transmitted over a distance of 30 km, the desirable transmission voltage will be.
- (A) 11 kV
 - (B) 33 kV
 - (C) 66 kV
 - (D) 132 kV
10. Induction cup relay is operated due to changes in :
- (A) Current
 - (B) Voltage
 - (C) Impedance
 - (D) All of the above
11. A certain transformer has 200 turns in the primary winding, 50 turns in the secondary winding and 120 volts applied to the primary. What is the voltage across the secondary?
- (A) 30 Volts
 - (B) 480 Volts
 - (C) 120 Volts
 - (D) 60 Volts
12. The following is not a Regulatory Commission:
- (A) BERC
 - (B) GERC
 - (C) CSERC
 - (D) DGVCL
13. The registered office of MGVCL is in _____.
- (A) Ahmedabad
 - (B) Valsad
 - (C) Vadodara
 - (D) Godhra
14. The following formula is correct:
- (A) Diversity factor = $1 / \text{Coincidence Factor}$
 - (B) Diversity factor = $1 \times \text{Coincidence Factor}$
 - (C) Diversity factor = $1 - \text{Coincidence Factor}$
 - (D) All of the above
15. Where is RAM located?
- (A) Expansion Board
 - (B) External Drive
 - (C) Mother Board
 - (D) All of above
16. An _____ is a network of electrical components used to supply, transfer and use electric power:
- (A) Electric power system
 - (B) Electric power
 - (C) All of the above
 - (D) None of the above
17. Which of the following are components of Central Processing Unit (CPU)?
- (A) Arithmetic logic unit, Mouse
 - (B) Arithmetic logic unit, Control unit
 - (C) Arithmetic logic unit, Integrated Circuits
 - (D) Control Unit, Monitor

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18. What would happen if a power transformer designed for operation on 50 Hz (frequency) were connected to a 500 Hz (frequency) source of the same voltage:
- (A) Eddy Current and Hysteresis losses will be excessive
 - (B) Current will be too much high
 - (C) Transformer may start to smoke and burn
 - (D) No effect
19. The energy radiated by Sun on a bright Sunny day is approximately:
- (A) 700 W/m²
 - (B) 800 W / m²
 - (C) 1 kW / m²
 - (D) 2 kW / m²
20. The Central Electricity Regulatory Commission (CERC) is mainly responsible for:
- (A) Regulating tariffs for generation and inter-state transmission of energy including tariffs
 - (B) Advising the government on tariff policy and promoting competition
 - (C) Efficiency and economy in the electricity industry
 - (D) All of the above
21. Earthing switch is used for?
- (A) Measuring of safety voltage
 - (B) Protection of equipment from ground faults
 - (C) Discharging residual energies
 - (D) All of the above
22. Which of the following is the product of data processing:
- (A) Information
 - (B) Data
 - (C) Software programme
 - (D) System
23. The Electricity Act is applicable in _____.
- (A) All parts of India
 - (B) All parts of India except state of Jammu and Kashmir
 - (C) All the states of India
 - (D) In Gujarat only
24. In case the height of transmission tower is increased, which of the following parameter is likely to change?
- (A) Resistance
 - (B) Inductance
 - (C) Capacitance
 - (D) None of the above
25. About how many times longer would a 10 watt light bulb be able to burn compared to a 100 watt bulb with the same energy?
- (A) 10 times longer
 - (B) 100 times longer
 - (C) Same time
 - (D) None of the above

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26. Which of the following is the least expensive protection for over current in low voltage system?
(A) Rewireable fuse
(B) Isolator
(C) Oil Circuit breaker
(D) Air break circuit breaker
27. _____ electric power is the most common method used by electrical grids to transfer power.
(A) One-phase
(B) Two-phase
(C) Three-phase
(D) None of the above
28. What will happen if the primary of a transformer is connected to D.C. supply?
(A) Transformer will operate with low efficiency
(B) Transformer will operate with high efficiency
(C) No effect
(D) Transformer may start to smoke and burn
29. The time of closing the cycle, in modern circuit breakers is
(A) 0.003 sec.
(B) 0.001 sec.
(C) 0.01 sec.
(D) 0.1 sec.
30. The main disadvantages of having poor power factors are:
(A) High cost of station and distribution equipment
(B) Poor voltage regulation
(C) High energy loss in conductor
(D) All of the above
31. Gujarat State Electricity Corp. Ltd. (GSECL) is a _____ .
(A) Transmission Company
(B) Distribution Company
(C) Regulatory Commission
(D) Power Generation Company
32. SF₆ gas :
(A) Is yellow in colour
(B) Is lighter than air
(C) Is nontoxic
(D) Has pungent smell
33. The following is correct :
(A) $P = V \times I$
(B) $P = I^2 \times R$
(C) $P = V^2 / R$
(D) All of the above
34. For 11 kV line the capacitance per km per phase will be of the order of:
(A) 1 Farad
(B) 0.1 Farad
(C) 0.01 Farad
(D) 0.01 microF

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35. Which unit holds data permanently?
(A) Input unit
(B) Secondary storage unit
(C) Output Unit
(D) Primary Memory Unit
36. The Minimum Oil Circuit Breaker (MOCB) is named because of :
(A) Reduced requirement of oil
(B) Reduced requirement of air
(C) All of the above
(D) None of the above
37. Isolator in substation is open under _____ condition?
(A) No load
(B) Short circuit
(C) Full load
(D) None of the above
38. Transformer has _____ .
(A) Primary winding and secondary winding
(B) Primary winding and Auxiliary winding
(C) Auxiliary winding and secondary winding
(D) None of the above
39. In fuel cell the _____ energy is converted into electrical energy.
(A) Mechanical
(B) Chemical
(C) Heat
(D) Sound
40. If the displayed system time and date is wrong, you can reset it using :
(A) Task bar
(B) Menu bar
(C) Desk top
(D) Control panel
41. A relay used for protection of motors against overload is :
(A) Impedance relay
(B) Electromagnetic attraction type
(C) Thermal relay
(D) Buchholz's relay
42. With effect from _____ India has adopted a new legislation called the Electricity Act 2003.
(A) 2 June 2003
(B) 3 June 2003
(C) 2 May 2003
(D) None of the above
43. Capacitance is the ability of a body to store an _____.
(A) electrical charge
(B) electric current
(C) voltage
(D) All of the above

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44. For 11kV line the inductance per km per phase will be of the order of:
- (A) 1 H
 - (B) 0.1 H
 - (C) 1 mH
 - (D) 0.1 mH
45. The SI unit of energy is :
- (A) Joule
 - (B) Newton
 - (C) Coulomb
 - (D) Henry
46. A circuit breaker is designed to protect an electrical circuit from damage caused by :
- (A) Over load
 - (B) Short circuit
 - (C) Over current
 - (D) All of the above
47. The number of cycles in which a high speed circuit breaker can complete its operation is
- (A) 3 to 8
 - (B) 10 to 18
 - (C) 20 to 30
 - (D) 40 to 50
48. The rating of fuse wire is always expressed in _____.
- (A) Ampere-hours
 - (B) kWh
 - (C) Amperes
 - (D) Ampere-volts
49. A 17 inch personal computer uses approximately 150 watts in an hour. If you have same computer on for only 4 minutes (for checking e-mail) what would be the power consumption?
- (A) 0.1 kW
 - (B) 0.04 kW
 - (C) 0.01 kW
 - (D) None of the above
50. The UGVCL is operative in the _____ Gujarat.
- (A) Northern
 - (B) Southern
 - (C) Central
 - (D) Western
51. The kVA rating of Three-phase transformer with Voltage = 200V and Current = 100A will be :
- (A) 34.64 kVA
 - (B) 75 kVA
 - (C) 20 kVA
 - (D) None of the above
52. GUVNL is :
- (A) Gujarat Urja Vikas Nigam Limited
 - (B) Gujarat Urja Vikas Nikash Limited
 - (C) Gujarat Urja Vyapar Nigam Limited
 - (D) None of the above

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53. The friction losses in Real Transformers are :
- (A) 0%
 - (B) 5%
 - (C) 25%
 - (D) 50%
54. Transformer core is laminated to _____ .
- (A) Reduce hysteresis loss
 - (B) Reduce eddy current losses
 - (C) Reduce copper losses
 - (D) Reduce all above losses
55. Step-down transformer converts high voltage and low current into:
- (A) How voltage and high current
 - (B) High voltage and low current
 - (C) Low voltage and high current
 - (D) None of the above
56. The permissible voltage variation in transmission and distribution system is:
- (A) $\pm 0.1\%$
 - (B) $\pm 1\%$
 - (C) $\pm 10\%$
 - (D) $\pm 25\%$
57. A Transformer _____ .
- (A) Changes DC to AC
 - (B) Changes AC to DC
 - (C) Steps up or down DC Voltages & Current
 - (D) Steps up or down AC Voltages & Current
58. Increasing the number of turns of wire on the secondary of a transformer will
- (A) Decrease the secondary current
 - (B) Increase the primary current
 - (C) Have no effect on the secondary current
 - (D) Increase the secondary current
59. In a transmission line if booster transformers are to be used, preferred location will be
- (A) At the receiving end
 - (B) At the sending end
 - (C) At the intermediate point
 - (D) Anywhere in the line
60. Core type transformers are popular in _____ .
- (A) High voltage applications
 - (B) Low voltage applications
 - (C) All of the above
 - (D) None of the above
61. As per Electricity Act, _____ means a process which simultaneously produces two or more forms of useful energy (including electricity).
- (A) Cogeneration
 - (B) Power generation
 - (C) Captive Power Plant
 - (D) None of the above

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62. Wave trap is used to trap waves of:
- (A) Power frequencies
 - (B) Higher frequencies entering generator or transformer units
 - (C) All of the above
 - (D) None of the above
63. The main objectives in framing tariff are:
- (A) The consumers must readily understand the tariffs
 - (B) The tariff must be equitable amongst different consumers
 - (C) Tariffs can be modified from time to time
 - (D) All of the above
64. The acting contacts for a circuit breakers are made of :
- (A) Stainless Steel
 - (B) Hard-pressed carbon
 - (C) Porcelain
 - (D) Copper Tungsten alloy
65. The core construction is like spokes of a wheel in following transformer:
- (A) Berry Type Transformer
 - (B) Core Type Transformer
 - (C) Shell Type Transformer
 - (D) None of the above
66. DGVCL is not distributing electricity in _____ district.
- (A) Tapi
 - (B) Vadodara
 - (C) Navsari
 - (D) Valsad
67. You should choose Sleep option when
- (A) The computer is tired after working for the whole day.
 - (B) You are leaving for a very short time and want to resume your work shortly.
 - (C) When computer gets hanged frequently. Let it sleep for some time.
 - (D) You finish working and are going to bed.
68. Admittance relay is _____ relay.
- (A) Impedance
 - (B) Directional
 - (C) Non-directional
 - (D) None of the above
69. As per Electricity Act, _____ means a person who has been granted a license to undertake trading in electricity under section 12.
- (A) Electricity trader
 - (B) Electricity supplier
 - (C) All of the above
 - (D) None of the above
70. Directional relays are based on flow of
- (A) Power
 - (B) Current
 - (C) Voltage
 - (D) All of the above

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71. One kilowatt-hour is?
(A) 3.6 mega joules
(B) 2.6 mega joules
(C) 1.6 mega joules
(D) None of the above
72. kWh meter is the electric meter that measures the amount of electrical _____ in kWh that was consumed in the house.
(A) Energy
(B) Current
(C) Voltage
(D) None of the above
73. A Step Up transformer :
(A) Steps up the level of Voltage
(B) Steps down the level of current
(C) Step up the level of Frequency
(D) (a) and (b) only
74. _____ are used where it is necessary to control a circuit by a low power signal.
(A) Relays
(B) Transformer
(C) Electric Motor
(D) None of the above
75. The following is/are the characteristics of SF₆ circuit breakers:
(A) It does not need an auxiliary breaking chamber
(B) Short break time of 2 to 2.5 cycles
(C) All of the above
(D) None of the above
76. A fuse wire should have :
(A) Low specific resistance and high melting point
(B) Low specific resistance and low melting point
(C) High specific resistance and high melting point
(D) High specific resistance and low melting point
77. For cost & safety, the outdoor substations are installed for voltages above:
(A) 11 kV
(B) 33 kV
(C) 60 kV
(D) 110 kV
78. The Electricity Act is an Act of _____ of India enacted to transform the power sector in India.
(A) The Parliament
(B) A State resolution
(C) All of the above
(D) None of the above
79. The process of a computer receiving information from a server via Internet is known as:
(A) Uploading
(B) Retrieving
(C) Downloading
(D) All of the above

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80. Reactance relay is used for protection against:
- (A) Phase fault
 - (B) Over voltage fault
 - (C) Earth fault
 - (D) None of these
81. The voltage of transmission can be regulated by
- (A) Use of tap changing transformers
 - (B) Switching in shunt capacitors at the receiving end during heavy loads
 - (C) Use of capacitors to neutralize the effect of series reactance
 - (D) Any of the above methods
82. Which of the following circuit breakers has high reliability & minimum maintenance?
- (A) Bulk oil type CB
 - (B) Air blast CB
 - (C) Vacuum CB
 - (D) Sulphur hexafluoride CB
83. True value has been 50 whereas measured value is 40 then the percentage error in the reading will be _____.
- (A) 20%
 - (B) 40%
 - (C) 50%
 - (D) 30%
84. The overall efficiency of Thermal Power Plant is equal to _____.
- (A) Regenerative Cycle Efficiency
 - (B) Rankine Cycle Efficiency
 - (C) Carnot cycle efficiency
 - (D) None of the above
85. Which of the following is not a part of transformer installation?
- (A) Conservator
 - (B) Breather
 - (C) Buchholz Relay
 - (D) Exciter
86. The consumer of electricity could be :
- (A) Domestic
 - (B) Agricultural
 - (C) Industrial and Commercial
 - (D) All of the above
87. Which of the following does not change in a transformer?
- (A) Current
 - (B) Voltage
 - (C) Frequency
 - (D) All of the above
88. The main advantage of AC over DC is:
- (A) Conversion flexibility from one voltage level to other
 - (B) AC can be easily converted into DC by using a rectifier
 - (C) AC is easy to maintain & can be easily distributed at long distances
 - (D) All of the above

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89. The relay operating speed depends upon
(A) The spring tension
(B) The rate of flux built up
(C) Armature core air gap
(D) All of the above
90. The arc temperature in Oil Circuit Breaker may reach up to_____.
(A) 5,000° K
(B) 8,000° K
(C) 10,000° K
(D) None of the above
91. Taskbar is used for
(A) Navigation program
(B) Switching between program
(C) Start a program
(D) All of above
92. Which of the following 3-phase connection of a transformer causes interference with the neighbouring communication lines:
(A) Delta-Star
(B) Star-Delta
(C) Delta-Delta
(D) Star-Star
93. The following is a Distribution Company:
(A) DERC
(B) MGVCL
(C) GERC
(D) CSERC
94. The rating of transformer may be expressed in _____.
(A) kVAR
(B) kW
(C) kVA
(D) Horse power
95. The transformer works on the principle of:
(A) Mutual induction
(B) Mutual capacitance
(C) All of the above
(D) None of the above
96. The load of a consumer is generally measured in terms of :
(A) Volts
(B) Amperes
(C) Ampere hour
(D) kW
97. In India _____ supply is 415 V supply through 4-wires.
(A) Single - phase
(B) Three - phase
(C) Two-phase
(D) None of the above

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98. The following is a Transmission Company:
- (A) GERC
 - (B) DGVCL
 - (C) GETCO
 - (D) MGVCL
99. Cylindrical type transformer has:
- (A) Single magnetic circuit
 - (B) Double magnetic circuit
 - (C) All of the above
 - (D) None of the above
100. An Auto-transformer (which has only one winding) may be used as a _____ .
- (A) Both Step-Up and Step-Down transformer
 - (B) Step-Down Transformer
 - (C) Step-Up Transformer
 - (D) None of these

***** Best of Luck *****

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Dakshin Gujarat Vij Company Limited

Written test for the Post of Vidhyut Sahayak - Jr. Engineer (Electrical)

Date: 12.06.2016

Time: 11:30 AM to 1:30 PM

ANSWER KEY - SET A

QUE NO.	ANS	QUE NO.	ANS	QUE NO.	ANS	QUE NO.	ANS
1	A	26	A	51	A	76	D
2	C	27	C	52	A	77	B
3	B	28	D	53	A	78	A
4	A & B	29	A	54	B	79	C
5	A	30	D	55	C	80	C
6	D	31	D	56	C	81	D
7	D	32	C	57	D	82	D
8	C	33	D	58	A	83	A
9	B	34	C	59	C	84	A
10	D	35	B	60	A	85	D
11	A	36	A	61	A	86	D
12	D	37	A	62	B	87	C
13	C	38	A	63	D	88	D
14	A	39	B	64	D	89	D
15	C	40	D	65	A	90	A
16	A	41	C	66	B	91	D
17	B	42	A	67	B	92	D
18	A	43	A	68	B	93	B
19	C	44	C	69	A	94	C
20	D	45	A	70	A	95	A
21	C	46	D	71	A	96	D
22	A	47	A	72	A	97	B
23	B	48	C	73	D	98	C
24	C	49	C	74	A	99	A
25	A	50	A	75	C	100	A

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- (A) Transformer will operate with low efficiency
(B) Transformer will operate with high efficiency
(C) No effect
(D) Transformer may start to smoke and burn
20. For 11 kV line the capacitance per km per phase will be of the order of:
(A) 1 Farad
(B) 0.1 Farad
(C) 0.01 Farad
(D) 0.01 microF
21. Transformer core is laminated to _____ .
(A) Reduce hysteresis loss
(B) Reduce eddy current losses
(C) Reduce copper losses
(D) Reduce all above losses
22. The rating of fuse wire is always expressed in _____ .
(A) Ampere-hours
(B) kWh
(C) Amperes
(D) Ampere-volts
23. About how many times longer would a 10 watt light bulb be able to burn compared to a 100 watt bulb with the same energy?
(A) 10 times longer
(B) 100 times longer
(C) Same time
(D) None of the above
24. Induction cup relay is operated due to changes in :
(A) Current
(B) Voltage
(C) Impedance
(D) All of the above
25. Taskbar is used for
(A) Navigation program
(B) Switching between program
(C) Start a program
(D) All of above
26. For a 66 kV line having span of 200 meters between towers the approximate sag will be 2 m. If the span is double the sag will be:
(A) 1 m
(B) 2 m
(C) 4m
(D) 8m
27. The permissible voltage variation in transmission and distribution system is:
(A) $\pm 0.1\%$
(B) $\pm 1\%$
(C) $\pm 10\%$
(D) $\pm 25\%$
28. The following formula is correct:

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- (A) Diversity factor =1 / Coincidence Factor
(B) Diversity factor =1 x Coincidence Factor
(C) Diversity factor =1 - Coincidence Factor
(D) All of the above
29. Directional relays are based on flow of
(A) Power
(B) Current
(C) Voltage
(D) All of the above
30. In India _____ supply is 415 V supply through 4-wires.
(A) Single - phase
(B) Three - phase
(C) Two-phase
(D) None of the above
31. The following is not a Regulatory Commission:
(A) BERC
(B) GERC
(C) CSERC
(D) DGVCL
32. A 100-watt light bulb turned on for 8 hours uses :
(A) 800 Wh
(B) 0.8 kWh
(C) 8 kWh
(D) None of the above
33. The Electricity Act is an Act of _____ of India enacted to transform the power sector in India.
(A) The Parliament
(B) A State resolution
(C) All of the above
(D) None of the above
34. A fuse wire should have :
(A) Low specific resistance and high melting point
(B) Low specific resistance and low melting point
(C) High specific resistance and high melting point
(D) High specific resistance and low melting point
35. In case the height of transmission tower is increased, which of the following parameter is likely to change?
(A) Resistance
(B) Inductance
(C) Capacitance
(D) None of the above
36. The core construction is like spokes of a wheel in following transformer:
(A) Berry Type Transformer
(B) Core Type Transformer
(C) Shell Type Transformer
(D) None of the above
37. Which of the following is the least expensive protection for over current in low voltage

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- system?
- (A) Rewireable fuse
(B) Isolator
(C) Oil Circuit breaker
(D) Air break circuit breaker
38. Step-down transformer converts high voltage and low current into:
(A) How voltage and high current
(B) High voltage and low current
(C) Low voltage and high current
(D) None of the above
39. The SI unit of energy is :
(A) Joule
(B) Newton
(C) Coulomb
(D) Henry
40. If the displayed system time and date is wrong, you can reset it using :
(A) Task bar
(B) Menu bar
(C) Desk top
(D) Control panel
41. A relay used for protection of motors against overload is :
(A) Impedance relay
(B) Electromagnetic attraction type
(C) Thermal relay
(D) Buchholz's relay
42. You should choose Sleep option when
(A) The computer is tired after working for the whole day.
(B) You are leaving for a very short time and want to resume your work shortly.
(C) When computer gets hanged frequently. Let it sleep for some time.
(D) You finish working and are going to bed.
43. An _____ is a network of electrical components used to supply, transfer and use electric power:
(A) Electric power system
(B) Electric power
(C) All of the above
(D) None of the above
44. In fuel cell the _____ energy is converted into electrical energy.
(A) Mechanical
(B) Chemical
(C) Heat
(D) Sound
45. The UGVCL is operative in the _____ Gujarat.
(A) Northern
(B) Southern
(C) Central
(D) Western
46. One kilowatt-hour is?

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- (A) 3.6 mega joules
(B) 2.6 mega joules
(C) 1.6 mega joules
(D) None of the above
47. The following is a Distribution Company:
(A) DERC
(B) MGVCL
(C) GERC
(D) CSERC
48. In a transmission line if booster transformers are to be used, preferred location will be
(A) At the receiving end
(B) At the sending end
(C) At the intermediate point
(D) Anywhere in the line
49. The main advantage of AC over DC is:
(A) Conversion flexibility from one voltage level to other
(B) AC can be easily converted into DC by using a rectifier
(C) AC is easy to maintain & can be easily distributed at long distances
(D) All of the above
50. _____ electric power is the most common method used by electrical grids to transfer power.
(A) One-phase
(B) Two-phase
(C) Three-phase
(D) None of the above
51. A Step Up transformer :
(A) Steps up the level of Voltage
(B) Steps down the level of current
(C) Step up the level of Frequency
(D) (a) and (b) only
52. Which unit holds data permanently?
(A) Input unit
(B) Secondary storage unit
(C) Output Unit
(D) Primary Memory Unit
53. _____ are used where it is necessary to control a circuit by a low power signal.
(A) Relays
(B) Transformer
(C) Electric Motor
(D) None of the above
54. A Transformer _____.
(A) Changes DC to AC
(B) Changes AC to DC
(C) Steps up or down DC Voltages & Current
(D) Steps up or down AC Voltages & Current
55. The acting contacts for a circuit breakers are made of :

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- (A) Stainless Steel
(B) Hard-pressed carbon
(C) Porcelain
(D) Copper Tungsten alloy
56. The following is/are the characteristics of SF₆ circuit breakers:
(A) It does not need an auxiliary breaking chamber
(B) Short break time of 2 to 2.5 cycles
(C) All of the above
(D) None of the above
57. Earthing switch is used for?
(A) Measuring of safety voltage
(B) Protection of equipment from ground faults
(C) Discharging residual energies
(D) All of the above
58. A certain transformer has 200 turns in the primary winding, 50 turns in the secondary winding and 120 volts applied to the primary. What is the voltage across the secondary?
(A) 30 Volts
(B) 480 Volts
(C) 120 Volts
(D) 60 Volts
59. Wave trap is used to trap waves of:
(A) Power frequencies
(B) Higher frequencies entering generator or transformer units
(C) All of the above
(D) None of the above
60. The following is a Transmission Company:
(A) GERC
(B) DGVCL
(C) GETCO
(D) MGVCL
61. A 17 inch personal computer uses approximately 150 watts in an hour. If you have same computer on for only 4 minutes (for checking e-mail) what would be the power consumption?
(A) 0.1 kW
(B) 0.04 kW
(C) 0.01 kW
(D) None of the above
62. kWh meter is the electric meter that measures the amount of electrical _____ in kWh that was consumed in the house.
(A) Energy
(B) Current
(C) Voltage
(D) None of the above
63. The overall efficiency of Thermal Power Plant is equal to _____ .
(A) Regenerative Cycle Efficiency
(B) Rankine Cycle Efficiency
(C) Carnot cycle efficiency
(D) None of the above

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64. For cost & safety, the outdoor substations are installed for voltages above:
(A) 11 kV
(B) 33 kV
(C) 60 kV
(D) 110 kV
65. Where is RAM located?
(A) Expansion Board
(B) External Drive
(C) Mother Board
(D) All of above
66. The relay operating speed depends upon
(A) The spring tension
(B) The rate of flux built up
(C) Armature core air gap
(D) All of the above
67. Reactance relay is used for protection against:
(A) Phase fault
(B) Over voltage fault
(C) Earth fault
(D) None of these
68. The Minimum Oil Circuit Breaker (MOCB) is named because of :
(A) Reduced requirement of oil
(B) Reduced requirement of air
(C) All of the above
(D) None of the above
69. Which of the following does not change in a transformer?
(A) Current
(B) Voltage
(C) Frequency
(D) All of the above
70. The Central Electricity Regulatory Commission (CERC) is mainly responsible for:
(A) Regulating tariffs for generation and inter-state transmission of energy including tariffs
(B) Advising the government on tariff policy and promoting competition
(C) Efficiency and economy in the electricity industry
(D) All of the above
71. As per Electricity Act, _____ means a process which simultaneously produces two or more forms of useful energy (including electricity).
(A) Cogeneration
(B) Power generation
(C) Captive Power Plant
(D) None of the above
72. The main objectives in framing tariff are:
(A) The consumers must readily understand the tariffs
(B) The tariff must be equitable amongst different consumers
(C) Tariffs can be modified from time to time
(D) All of the above

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73. With effect from _____ India has adopted a new legislation called the Electricity Act 2003.
- (A) 2 June 2003
 - (B) 3 June 2003
 - (C) 2 May 2003
 - (D) None of the above
74. As per Electricity Act, _____ means any line which is used for carrying electricity for any purpose.
- (A) Electric line
 - (B) Transmission line
 - (C) All of the above
 - (D) None of the above
75. The load of a consumer is generally measured in terms of :
- (A) Volts
 - (B) Amperes
 - (C) Ampere hour
 - (D) kW
76. DGVCL is not distributing electricity in _____ district.
- (A) Tapi
 - (B) Vadodara
 - (C) Navsari
 - (D) Valsad
77. The number of cycles in which a high speed circuit breaker can complete its operation is
- (A) 3 to 8
 - (B) 10 to 18
 - (C) 20 to 30
 - (D) 40 to 50
78. Which of the following 3-phase connection of a transformer causes interference with the neighbouring communication lines:
- (A) Delta-Star
 - (B) Star-Delta
 - (C) Delta-Delta
 - (D) Star-Star
79. The energy radiated by Sun on a bright Sunny day is approximately:
- (A) 700 W/m²
 - (B) 800 W / m²
 - (C) 1 kW / m²
 - (D) 2 kW / m²
80. Admittance relay is _____ relay.
- (A) Impedance
 - (B) Directional
 - (C) Non-directional
 - (D) None of the above
81. The kVA rating of Three-phase transformer with Voltage = 200V and Current = 100A will be :
- (A) 34.64 kVA
 - (B) 75 kVA
 - (C) 20 kVA
 - (D) None of the above

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82. The process of a computer receiving information from a server via Internet is known as:
- (A) Uploading
 - (B) Retrieving
 - (C) Downloading
 - (D) All of the above
83. Isolator in substation is open under _____ condition?
- (A) No load
 - (B) Short circuit
 - (C) Full load
 - (D) None of the above
84. SF₆ gas :
- (A) Is yellow in colour
 - (B) Is lighter than air
 - (C) Is nontoxic
 - (D) Has pungent smell
85. The transformer works on the principle of:
- (A) Mutual induction
 - (B) Mutual capacitance
 - (C) All of the above
 - (D) None of the above
86. The time of closing the cycle, in modern circuit breakers is
- (A) 0.003 sec.
 - (B) 0.001 sec.
 - (C) 0.01 sec.
 - (D) 0.1 sec.
87. If 3000 kW power is to be transmitted over a distance of 30 km, the desirable transmission voltage will be.
- (A) 11 kV
 - (B) 33 kV
 - (C) 66 kV
 - (D) 132 kV
88. In a transformer the energy is conveyed from primary to secondary
- (A) Through cooling coil
 - (B) Through air
 - (C) By the flux
 - (D) None of the above
89. The voltage of transmission can be regulated by
- (A) Use of tap changing transformers
 - (B) Switching in shunt capacitors at the receiving end during heavy loads
 - (C) Use of capacitors to neutralize the effect of series reactance
 - (D) Any of the above methods
90. The arc temperature in Oil Circuit Breaker may reach up to_____.
- (A) 5,000° K
 - (B) 8,000° K
 - (C) 10,000° K
 - (D) None of the above

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91. Which of the following are components of Central Processing Unit (CPU)?
(A) Arithmetic logic unit, Mouse
(B) Arithmetic logic unit, Control unit
(C) Arithmetic logic unit, Integrated Circuits
(D) Control Unit, Monitor
92. Which of the following circuit breakers has high reliability & minimum maintenance?
(A) Bulk oil type CB
(B) Air blast CB
(C) Vacuum CB
(D) Sulphur hexafluoride CB
93. Increasing the number of turns of wire on the secondary of a transformer will
(A) Decrease the secondary current
(B) Increase the primary current
(C) Have no effect on the secondary current
(D) Increase the secondary current
94. A circuit breaker is designed to protect an electrical circuit from damage caused by :
(A) Over load
(B) Short circuit
(C) Over current
(D) All of the above
95. The following formula is correct:
(A) Load factor=Average load for a period/ Peak load for the same period
(B) Load factor=Average load for a period x Peak load for the same period
(C) Load factor=Average load for a period + Peak load for the same period
(D) All of the above
96. GUVNL is :
(A) Gujarat Urja Vikas Nigam Limited
(B) Gujarat Urja Vikas Nikash Limited
(C) Gujarat Urja Vyapar Nigam Limited
(D) None of the above
97. True value has been 50 whereas measured value is 40 then the percentage error in the reading will be _____.
(A) 20%
(B) 40%
(C) 50%
(D) 30%
98. As per Electricity Act, _____ means a person who has been granted a license to undertake trading in electricity under section 12.
(A) Electricity trader
(B) Electricity supplier
(C) All of the above
(D) None of the above
99. For 11kV line the inductance per km per phase will be of the order of:
(A) 1 H
(B) 0.1 H
(C) 1 mH
(D) 0.1 mH



BARODA PRODUCTIVITY COUNCIL
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100. The friction losses in Real Transformers are :
- (A) 0%
 - (B) 5%
 - (C) 25%
 - (D) 50%

***** Best of Luck *****

Dakshin Gujarat Vij Company Limited

Written test for the Post of Vidhyut Sahayak - Jr. Engineer (Electrical)

Please read the instructions carefully before attending the Question paper. All Questions are compulsory.

Date: 12.06.2016

Time: 11:30 AM to 1:30 PM

ANSWER KEY - SET B

QUE NO.	ANS	QUE NO.	ANS	QUE NO.	ANS	QUE NO.	ANS
1	A	26	D	51	D	76	B
2	C	27	C	52	B	77	A
3	C	28	A	53	A	78	D
4	A	29	A	54	D	79	C
5	D	30	B	55	D	80	B
6	A	31	D	56	C	81	A
7	D	32	A & B	57	C	82	C
8	D	33	A	58	A	83	A
9	A	34	D	59	B	84	C
10	D	35	C	60	C	85	A
11	D	36	A	61	C	86	A
12	D	37	A	62	A	87	B
13	A	38	C	63	A	88	C
14	A	39	A	64	B	89	D
15	A	40	D	65	C	90	A
16	C	41	C	66	D	91	B
17	B	42	B	67	C	92	D
18	B	43	A	68	A	93	A
19	D	44	B	69	C	94	D
20	C	45	A	70	D	95	A
21	B	46	A	71	A	96	A
22	C	47	B	72	D	97	A
23	A	48	C	73	A	98	A
24	D	49	D	74	A	99	C
25	D	50	C	75	D	100	A