

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
1	A Single Phase alternator has six slots per pole. The induce EMF when all the slots are wound do E1, While that only with four slots per pole wound, the remaining being left unwound is E2. Then E1 : E2 = -----	1	1:1.3	1.3 :1	1:1	3:2
2	The wrong statement among the following is	1	A fuse can be fitted in an outlet socket	A fuse should not get overheated	The current rating of fuse should not exceed the rating of the smallest cable protected	Fuse having rating less than 3 A can be used in radio
3	The fusing current of a fuse depends on its	4	Material and its length	Length and its diameter	Material and diameter	Material, length and diameter
4	For improving the soil condition and efficiency of earthing system, the pit area around the G.I. pipe is filled with	4	Mixture of copper and nickel	Mixture of chloride and sodium	Mixture of aluminium and sulphate	Mixture of salt and coal
5	For solving parallel ac circuit, the method used is	4	Vector method	Admittance method	Symbolic or j - method	All of these
6	The net power in a series R-C circuit is	2	Zero	Positive	Negative	None of these
7	The product of rms values of current and voltage is called as	2	Real power	Apparent power	Reactive power	Polar curves
8	The power absorbed by a pure inductive circuit and pure capacitive circuit is	4	Zero and non zero	. Non zero and zero	Non zero and non zero	Zero and zero
9	The power curve for a purely resistive circuit is zero only when	3	Current is zero	Voltage is zero	Both current and voltage is zero	None of these
10	The moving system of induction type single - phase energy meter consists of	4	One pointer and two control spring	Two pointer and two control spring	Two pointer and two control spring	No pointer and no control spring
11	Efficiency of a transformer is maximum at	3	Leading power factor	Lagging power factor	Unity power factor	None of these
12	Copper losses occurs due to ohmic resistance in	3	Primary winding	Secondary winding	Both primary and secondary winding	None of these
13	The non salient pole type synchronous generator is driven by	3	Hydraulic turbines	Diesel engines	Steam engines	All of these
14	In India, the synchronous generator generates	1	11 kilo - volts	33 kV	66 kV	Either (a) or (b)
15	The synchronous generator is also called an	4	AC generator	Alternator	DC generator	Only (a) and (b)
16	From full load to no load, the change of terminal voltage is more in case of	4	Lagging power factor	Leading power factor	Unity power factor	Both lagging and leading power factor compared to unity power factor
17	The two wattmeter method is applicable for	3	Only star connected system	Only delta connected system	Both star connected and delta connected system	None of these
18	By using two wattmeter method, power can be measured in	2	3 - phase, 2 - wire system	3 - phase, 3 - wire system	3 - phase, 4 - wire system	All of these

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19	In delta connected system, the potential difference between line outers is	1	Equal to the phase voltage	Greater than the phase voltage	Less than the phase voltage	None of these
20	For extinguishing arc in an high voltage fuses, the element can be immersed in	4	Oil	Carbon tetrachloride	Carbon tetrafloride	Only (a) and (b)
21	Among the following damping method, the most effective and efficient damping is	3	Air friction damping	Fluid friction damping	Eddy current damping	None of these
22	In order to bring the pointer to rest within a short time,	2	Gravity control is required	Damping control is required	Spring control is required	All of these
23	For application in electric locomotives or for traction purposes, the most suitable motor is	1	Dc series motor	Differentially compounded motor	Cumulatively compounded motor	None of these
24	If the armature current of dc series motor has become twice then the torque will become	2	Twice of the former	Four times of the former	One fourth of the former	Remains same
25	The field winding of dc series motor consists of few turns of	2	Thin wire with low resistance	Thick wire with low resistance	Thin wire with high resistance	Thick wire with high resistance
26	When the motor runs on no load, then	1	Back emf is almost equal to applied voltage	Back emf will be greater than applied voltage	Back emf will be less than applied voltage	None of these
27	If the number of turns, area and current of an ac circuit is doubled then the new inductance will be	3	Equal to the former	Twice of the former	Four times the former	Half of the former
28	The phasor current through a 200 ohm resistor assuming a voltage of 200Arms at an angle of zero degree applied across it is	1	1Arms at an angle of zero degree	1Arms at an angle of 45 degree	1Arms at an angle of 90 degree	1Arms at an angle of 180 degree
29	A vector quantity has	3	Only magnitude	Only direction	Both (a) and (b)	None of these
30	In ac circuit the maximum current required is	2	Equal to the effective current	1.414 times the effective current	Twice the effective current	1.732 times the effective current
31	The amount of work done in moving a charge from one point to another along an equipotential line or surface charge is	1	Zero	Infinity	One	Two
32	For forming an electric dipole between two point charges separated by a small distance, the two point charges are of	4	Unequal magnitude and opposite sign	Unequal magnitude but same sign	Equal magnitude and same sign	Equal magnitude but opposite sign
33	The potential difference between two points is given by	2	$V = E / Q$	$V = W / Q$	$V = Q / E$	$V = Q / W$
34	Gauss's law is applicable for	3	Only point charge	Infinite line charge	Infinite sheet of charge	All of these
35	Total electric flux through any closed surface is equal to the charge enclosed by that surface ". This is	2	Lenz's law	Gauss's law	Maxwell's law	Faraday's law
36	For a four pole two layer DC, lap winding with 20 slots and 1 conductor per layer the number of commutator bars is -----	2	80	20	40	160

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37	The frequency of rotor current in an induction motor is	2	slip times the frequency of stator current	slip times the frequency of supply	One by slip times the frequency of stator current	One by slip times the frequency of supply
38	Slip of an induction motor increases with	2	increase in current and decrease in torque	increase in current and torque	decrease in current and torque	decrease in current and increase in torque
39	In an induction motor, rotor speed is always	1	Less than the stator speed	More than the stator speed	Equal to the stator speed	None of these
40	The frequency of the induced emf in an induction motor is	3	Greater than the supply frequency	Lesser than the supply frequency	Same as the supply frequency	None of these
41	An SCR can be used	4	as static conductor	for power control	for speed control of dc shunt motor	All of these
42	Copper losses is proportional to	2	kVA	square of kVA	cube of kVA	none of these
43	If the transformer is loaded then the secondary terminal voltage falls for and rises for	1	P.F. of circuit is low	impedance to resistance ratio of the circuit is low	Bandwidth is zero	none of these
44	When Q factor of load is low , then	2	Leading power factor	Lagging power factor	Unity power factor	None of these
45	In an alternator voltage droops occurs in	3	Armature resistance only	Armature resistance and leakage reactance	Armature resistance, leakage reactance and armature reaction	Armature resistance, leakage reactance, armature reaction & earth connections
46	The number of cycles of the induced emf per second is equal to	1	No. of cycles per revolutions x no. of revolutions per second	No. of cycles per second x no. of revolutions per second	No. of cycles per revolutions x no. of revolutions per hour	No. of cycles per revolutions / no. of revolutions per second
47	In an alternator, at lagging p.f., the generated voltage per phase, as compared to that of unity power factor	3	must be same as terminal voltage	must be less than terminal voltage	must be more than terminal voltage	must be 1.41 time the terminal voltage
48	If the input to the prime mover of an alternator is kept constant but the excitation is changed, then the	1	reactive component of output changed	active component of output changed	Power factor of load remains constant	Power factor of load reduces
49	when two alternators are running in parallel, their RKVA load share is changed by changing their..... While their KW load share is changed by changing their.....	1	Excitation, driving torque	driving torque, Excitation,	Excitation, Excitation,	driving torque, driving torque
50	An alternator is supplying 10A to an inductive load at 220V, while running at 1000rpm. Now if the speed of the alternator is reduced to 750rpm but the field current remains unchanged, the load current will become	3	18A	13.3A	10A	7.5A
51	In a balanced 3-phase system, if one of the two wattmeter's reading is negative then the	2	Reading should be taken as it is	Reading should be taken after reversing the pressure coil	Reading should be taken after reversing the current coil	All of these

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52	A DC AH meter is rated for 15 AMP 250V in the meter constant is 14.4 a Sec. per revalution. The Meter constant at rated Voltage may be Express as -----	2	3750 REV/KWH	1000 REV/KWH	3600 REV/KWH	960 REV/KWH
53	The torque developed by split phase motor is proportional to	1	Sine of angle Between I_m & I_s	Cosine of angle Between I_m & I_s	Main winding current, I_m	Auxillary winding current, I_s
54	The direction of rotation of universal motor can be reversed by	3	reversing the supply terminals	switching over from ac to dc	Interchanging the brush lead	any of the above
55	Purpose of oil in high rating transformer is i. lubrication of core. ii.insulation iii.cooling of transformer iv. Providing fuel for operation	4	only i and ii	Only ii,iii and iv	only ii	only ii and iii
56	In HRC fuses, the space within the body surrounding the element is usually filled with	3	Silver	Zinc	Quartz	Copper
57	Kirchhoffs voltage law is based on	3	Law of conservation of voltage	Law of conservation of current	Law of conservation of energy	All of the above.
58	Thevinins theorem can be applied to networks containing	4	Passive elements only	Active elements only	Linear elements only	None of these
59	The electric power from primary distribution line is delivered to distribution substations by using	3	1 phase wire	3 phase, 3 wire	3 phase, 4 wire	All of these
60	What does section 44 refer to?	1	Penalty for interference with meters	Penalty for illegal transmission or use of energy	Penalty for maliciously wasting energy	Theft of energy
61	Which section in the IE Act deals with the 'theft of energy'?	1	Section 39	Section 40	Section 43	Section 44
62	The basic difference between square wave and pulse generator is their	2	Waveforms shape	Duty cycles	Frequency range	Cost
63	The full range of audibility in audio frequency oscillator is	3	0 to 20 Hz	20 Hz to 2 kHz	20 Hz to 20 kHz	20 Hz to 20 MHz
64	A ameter has a current range of 0 to 5 AMP and its internal resistance is 0.2 OHMS in order to change the range 0 to 25 we need to add resistnace of -----	4	0.8 OHMS in series with the meter	1 OHMS in series with the meter	0.04 OHMS in parelal with the meter	0.05 OHMS in parelal with the meter
65	In light emitting diode, the available light emitting region is	2	Less than 2.5 mm	From 2.5 to 25 mm	Greater than 25 mm	Greater than 50 mm
66	Turbine meters are generally preferred for	1	Low-viscosity and high flow measurements	High viscosity and low flow measurements	High viscosity and high flow measurements	Low viscosity and low flow measurements
67	A differential relay comparator used for the protection of three phase transformers has	3	One comparator	Two comparator	Three comparator	Six comparator
68	In double delta transformation, a double delta refers to the case where there are two delta transformations in	2	Parallel	Series	Both series and parallel	Neither series nor parallel

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69	In Scott connection, the voltage across the teaser leads the mains by	3	30 degree	60 degree	90 degree	120 degree
70	Scott connection is used for the conversion of	3	Single phase to three phase	Three phase to single phase	Single phase to two phase	All of these
71	Consider three transformers connected in delta-delta fashion and supplying their rated load. Now if one of the transformer is removed then each of the remaining two transformer is overloaded. The overload on each transformer is given as	3	1	1.232	1.732	1.872
72	For large low voltage transformers, the most commonly used connections are	2	Star - star connection	Delta - delta connection	V connection	All of these
73	The phase shift in a star-star connected three phase transformer is	1	0 degree	30 degree	60 degree	120 degree
74	For the parallel operation of three phase transformers, which among the following connection is not applicable?	4	$\Delta - \Delta$ to $Y - Y$	$Y - \Delta$ to $\Delta - Y$	$Y - Y$ to $Y - Y$	None of these
75	A bank of three single phase transformer can be used for obtaining the three phase output. Three magnetic circuits produced in case of a bank of three single phase transformer and in case of single phase transformer are	2	Linked, independent	Independent, linked	Linked, linked	Both are independent
76	In a three phase transformer, the current flowing in three primaries produces three corresponding fluxes. The sum of these three fluxes at any instant is	1	Zero	Three times of any individual flux	One third of any individual flux	None of these
77	Pulse transformers are small in size. The leakage inductance and permeability of alloy used is	1	Low, high	Low, low	High, low	High, high
78	The high leakage impedance transformers are suitable for the applications of	1	Arc welding	Personal computers	Street lights	Electric lamp
79	The output voltage of constant voltage transformer contains excessive harmonics which can be filtered out by using	2	RC filter	RL filter	LC filter	None of these
80	A constant voltage transformer is fed with the sinusoidal input voltage. Its output is	2	Sinusoidal	Flat topped	Saw tooth	Zig-zag
81	A ferro resonant transformer regulation is also known as	3	Constant current transformer	Constant voltage transformer	Variable current transformer	Variable voltage transformer
82	A star connected three phase transformer is provided with tertiary delta connected winding which allows the flow of	2	Second harmonic of exciting current	Third harmonic of exciting current	Fifth harmonic of exciting current	Seventh harmonic of exciting current

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83	If a two winding transformer is converted into an autotransformer by applying additive polarity and subtractive polarity which results in the secondary voltages of 1840 and 1810 volts. Then the primary and secondary voltages of transformer are	4	1800V, 50V	1810V, 40V	1820V, 30V	1825V, 15V
84	Whether the given autotransformer is step up or step down, its VA rating is always	1	Greater than the two winding transformer	Equal to the two winding transformer	less than the two winding transformer	cannot say
85	If an autotransformer having transformation ratio equal to 0.6 is supplying a load of 8kw then its power transferred from primary to secondary is given by	2	3 kW	3.2 kW	3.4 kW	3.5 kW
86	Use of an autotransformer is economical when its transformation ratio is	1	Near unity	Much greater than unity	Much lesser than unity	None of these
87	Which of the following circuit breakers has the lowest operating voltage?	2	SF6 circuit breaker	Air break	Air blast	Minimum oil circuit breaker
88	On what factor does the operating speed of the relay depend?	4	Rate of flux built up	Armature core air gap	Spring tension	All of these
89	A 230V, 5amps, 50 HZ, single phase house service meter has a meter constant of 360 revolution per KWH. The meter takes 50 Sec. for making 51revolution of the disc. When connected to a 10 KW unity power factor load. The error in the reading of the meter is -----	4	0%	0.50%	20%	2%
90	What is the major cause of the failure of the circuit breaker?	4	Trip circuit open	Trip latch defective	Spring defective	All of these
91	Why are the isolators used?	3	Break abnormal current	Making under fault conditions	Breaking the circuit under no load condition	None of the above
92	The isolators used in the transmission lines are capable of breaking	3	Fault current	No current	Charging current	Load current
93	For which among the following the current ratings are not required?	1	Circuit breakers	Relays	Isolators	Load break switch
94	Why is an isolator installed?	1	To isolate one portion of the circuit from another	As an substitute for the circuit breaker	It used on either sides of the circuit breaker	Both (a) and (c)
95	A three phase circuit breaker is rated 2000 MVA, 33 kV. What will be its making current?	4	35 kA	49 kA	70 kA	89 kA
96	Which of the following circuit breaker is highly reliable and has a least maintenance?	4	Oil circuit breakers	Air blast	Vacuum circuit breakers	SF6 circuit breakers
97	With a gate cathod voltage constant at 5v, the gate current of a thyristor is observed to be 0.1 AMPS if gate pulse of duty cycle 0.7 are used the average gate power dissipated in Watts is -----	2	0.5	0.35	5	0.035

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98	Which of the following circuit breakers is used for the railway electrification?	1	Air blast circuit breaker	SF6 circuit breaker	Bulk oil circuit breaker	Minimum oil circuit breaker
99	A thermal protection switch provides protection against what?	1	Overload	Temperature	Short circuit	Over voltage
100	AND operation is equivalent to	3	Division	Union	Intersection	Both B and C
101	Which of these sets of logic gates are designated as universal gates?	1	NOR, NAND.	XOR, NOR, NAND.	OR, NOT, AND.	NOR, NAND, XNOR.
102	A D-flip-flop is said to be transparent when	4	the output is LOW	the output is HIGH	the output follows clock	the output follow input
103	How many entries will be in the truth table of a 3 input NAND gate ?	3	3	6	8	9
104	Which of the following memories uses one transistor and one capacitor as basic memory unit	2	SRAM	DRAM	Both SRAM and DRAM	None
105	Ohm's law in point from field theory can be expressed as	3	$J = \sigma E.$	$V = IR.$	$J = E / \sigma.$	$R = \rho \times (l / A).$
106	The drawback of Daltons atomic structure is that, it says	1	the atoms can neither be created nor be destroyed.	unique nature of atom.	most of the volume of an atom is empty space.	none of these.
107	Cork Screw rule is used to find	1	direction of current.	direction of magnetic field.	direction of electric field.	direction of emf.
108	Conductor is constant and field is varying then emf will induce. This principle is called	3	virtually induced emf.	dynamically induced emf.	static induced emf.	none of these
109	The right hand rule for determining the direction of the induced EMF was introduced by	3	Faraday	Lenz	Fleming	Maxwell
110	Sulphation in a lead acid battery occurs due to	4	heavy charging.	fast charging.	trickle charging.	incomplete charging
111	What is mean by ALU	4	Arithmetic logic upgrade	Arithmetic logic unsigned	Arithmetic local unsigned	Arithmetic logic unit
112	What are the constituents in speed time curve of train?	4	Coasting.	Initial acceleration.	Constant speed.	All of these.
113	Which of the following state capital is not on broad gauge track?	3	Lucknow.	Bhopal.	Jaipur.	Chandigarh.
114	The power input to a 415 V 50 HZ 6 pole 3 phase induction motor running at 975 RPM is 40 KW and Friction and windage lossess total 2 KW. The efficiency of motor is	2	92.50%	90%	91%	88%
115	SCII code is a	2	5-bit code	7-bit code	8-bit code	10-bit code
116	ASCII and EBCDIC codes are	3	BCD codes	numeric codes	alphanumeric codes	error correcting codes
117	2421 code is	1	weighted self-complementing code	non-weighted self-complementing code	weighted non-self-complementing code	non-weighted and non-self-complementing code
118	The devices commonly used for making digital circuits are	4	mechanical switches	relays	contact switches	semiconductor devices

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119	A 3 phase squirrel cage induction motor has a starting torque of 150% and a maximum torque of 300% with respect to rated torque at rated voltage and frequency. Neglect the stator resistance and rotational losses. The Value of Slip for maximum torque is -----	4	13.48%	16.42%	18.92%	26.79%
120	The fast logic family is	1	ECL.	DRL.	TRL.	TTL.
121	Counter is a	2	combinational circuit.	sequential circuit.	both.	none.
122	If clock time period is 1ms, what is its frequency	2	1 mHz	1 kHz	1 MHz	None of these
123	A digital voltmeter has a read out range from 0 to 999 counts, the resolution is	3	1 V.	0.01 V.	1 mV.	10mV
124	A flip flop is a _____ circuit.	2	Combinational	Sequential	Both A and B	None
125	The switch which clears a flip-flop is known as	3	Reset	Clear	Both A and B	None
126	When will the output of a NOT gate be HIGH ?	2	the input is HIGH	the input is LOW	the input is HIGH and LOW	none of these
127	Which circuit is used in between two systems having two different codes	4	Sequential	Combinational	Both A and B	Conversion
128	Why encoder is used in the digital electronics ?	1	To convert non coded information into coded form	To convert coded information into non coded form	It is used to separate address bus and data bus	None of these
129	Boolean algebra, OR is represented by	2	x	+	-	/
130	The unit of resistivity	2	Ω .	Ω - metre.	Ω / metre.	Ω / m ² .
131	How many coulombs of charge flow through a circuit carrying a current of 10 A in 1 minute?	3	10	60	600	1200
132	The resistance of a conductor of diameter d and length l is R Ω . If the diameter of the conductor is halved and its length is doubled, the resistance will be	4	R Ω	2R Ω	4R Ω	8R Ω
133	The resistivity of the conductor depends on	3	Area of the conductor	Length of the conductor	Type of material	None of these.
134	If 1 A current flows in a circuit, the number of electrons flowing through this circuit is	1	0.625×10^{19}	1.6×10^{19}	1.6×10^{-19}	0.625×10^{-19}
135	A three phase, 33 kV oil circuit breaker is rated 1200 A, 2000 MVA, 3s. What is its symmetrical breaking current?	3	1200 A	3600 A	35 kA	104.8 kA
136	What is / are the main disadvantage / s of using oil as the quenching medium in the circuit breakers?	4	Need periodical replacement.	Risk of formation of explosive mixture with air.	Possibility of causing fire hazards.	All of these.
137	What is the main disadvantage of phase advancers?	1	Cannot be used for motors below 200 H.P	Produces noise	Can be used where synchronous motor is unadmissible	None of these

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138	A transformer costing Rs 90,000 has a useful life of 20 years. Determine the annual depreciation charge using straight line method. Assume salvage to be 15,000.	2	4000	3750	4350	3500
139	The most suitable location for the power factor improvement device is	4	Near the electrical appliance which is responsible for the poor power factor.	At the sending end.	At the receiving end in case of transmission lines.	None of these
140	Phase advancers are used for which among the following machines?	3	Transformers	Synchronous machines	Induction motors	DC machines
141	What is the advantage of the static capacitors?	4	Low losses	Easy installation	Lower maintenance	All of these
142	For which among the following consumers is penalty imposed for low power factor?	2	Residential and commercial consumers.	Industrial consumers.	Agricultural consumers.	All of these.
143	The primary reason for the low power factor is due to the installation of	1	Induction motors	DC motors	Synchronous motors	Commutator motors
144	Which among the following happens in a low power factor?	4	Large kVA rating of the equipment.	Greater conductor size.	Reduced handling capacity of the system.	All of these.
145	What is maximum value of power factor?	2	0.5	1	1.5	0.95
146	A consumer having lower power factor contributes towards which factor?	4	Semi fixed charges.	Fixed charges.	Running charges.	Penalty is imposed.
147	Why is a big consumer charged at a lower rate than the small consumer?	2	Their maximum demand is small.	It improves the load factor.	Both (a) and (b).	None of these.
148	What is the difference between two part tariff and maximum demand tariff?	2	A separate meter is used	A separate maximum demand meter is used	Semi fixed charges are also included	All of these
149	A 400V, 50 KVA .8 PF leading 3 Connected 50 HZ synchronous machine has a synchronous reactance of 2 OHMS and negligible armature resistance the friction and windage losses are 2KW and the core loss 0.8 KW. The shaft supplying 9 KW load at a power factor of 0.8 leading. The line current drawn is -----	3	12.29	16.24	21.29	36.88
150	Block rate tariff, where energy charge decreases with the increase in energy consumption,	1	Encourages the consumers for more consumption.	Discourages the consumers for more consumption.	Encourages the consumers to restrict their demand.	Encourages the consumers to improve the power factor.
151	The resistance of a conductor of diameter d and length l is R Ω. If the diameter of the conductor is halved and its length is doubled, the resistance will be	4	R Ω	2R Ω	4R Ω	8R Ω
152	How many coulombs of charge flow through a circuit carrying a current of 10 A in 1 minute?	3	10	60	600	1200

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153	The drawback of Daltons atomic structure is that, it says	1	the atoms can neither be created nor be destroyed.	unique nature of atom.	most of the volume of an atom is empty space.	none of these.
154	Ohm's law in point form from field theory can be expressed as	2	$J = \sigma E$.	$V = IR$.	$J = E / \sigma$.	$R = \rho \times (l / A)$.
155	Which of the following memories uses one transistor and one capacitor as basic memory unit	2	SRAM	DRAM	Both SRAM and DRAM	None
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162	A three phase circuit breaker is rated 2000 MVA, 33 kV. What will be its making current?	4	35 kA	49 kA	70 kA	89 kA
163	What is the actuating quantity for the relays?	4	Magnitude	Frequency	Phase angle	All of these
164	If an autotransformer having transformation ratio equal to 0.6 is supplying a load of 8kw then its power transferred from primary to secondary is given by	2	3 kW	3.2 kW	3.4 kW	3.5 kW
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173	The non salient pole type synchronous generator is driven by	3	Hydraulic turbines	Diesel engines	Steam engines	All of these
174	Copper losses is proportional to	2	kVA	square of kVA	cube of kVA	none of these
175	An SCR can be used	4	as static conductor	for power control	for speed control of dc shunt motor	All of these
176	The frequency of the induced emf in an induction motor is	3	Greater than the supply frequency	Lesser than the supply frequency	Same as the supply frequency	None of these
177	The frequency of rotor current in an induction motor is	2	slip times the frequency of stator current	slip times the frequency of supply	One by slip times the frequency of stator current	One by slip times the frequency of supply
178	For forming an electric dipole between two point charges separated by a small distance, the two point charges are of	4	Unequal magnitude and opposite sign	Unequal magnitude but same sign	Equal magnitude and same sign	Equal magnitude but opposite sign
179	The phasor current through a 200 ohm resistor assuming a voltage of 200Arms at an angle of zero degree applied across it is	1	1Arms at an angle of zero degree	1Arms at an angle of 45 degree	1Arms at an angle of 90 degree	1Arms at an angle of 180 degree
180	For application in electric locomotives or for traction purposes, the most suitable motor is	1	Dc series motor	Differentially compounded motor	Cumulatively compounded motor	None of these
181	Among the following damping method, the most effective and efficient damping is	3	Air friction damping	Fluid friction damping	Eddy current damping	None of these
182	In HRC fuses, the space within the body surrounding the element is usually filled with	3	Silver	Zinc	Quartz	Copper
183	To reduce Effect it is preferable to use bundled conductor	1	Corona	Skin	Ferranti	None of the above
184	IDMT stands for Inverse DefiniteTime relay	1	minimum	Maximum	More	Miniature
185	A motor which can conveniently be operated at lagging as well as leading power factors is the-----	3	I.M	Universal	synchronous motor	D.C
186	Soak pit for oil of transformer is necessary only if aggregate oil capacity exceeds ltrs.	4	100.00	500.00	1000.00	2000.00

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
187	The highest voltage for transmitting electrical power in India is	3	220 kV	400 kv	765 kv	800 kV
188	If a Y- connected AC generator, each phase voltage has a magnitude of 90 Vrms, what is the magnitude of each line voltage?	3	0 V	90 V	156 V	180 V
189	18) A 1:5 step-up transformer has 120V across the primary and 600 ohms resistance across the secondary. Assuming 100% efficiency, the primary current equals	2	20 Amp.	0.2 Amp.	5 Amp.	10 Amp.
190	Harmonics in transformer result in	4	Increased core losses	Increased I^2R losses	Magnetic interference with communication circuits	All of these
191	The full load copper loss of a transformer is 1600W. At half-load the copper loss will be	4	6400W	1600W	800W	400W
192	The noise resulting from vibrations of lamination set by magnetic forces is known as-----	3	Magnetostriction	Boo.	Hum.	Zoom
193	Auto transformer makes effective saving on copper and copper losses, when its transformation ratio is equal to	4	Very low	Less than one	Greater than one	Approximately one
194	If frequency is 50 Hz and speed is 500 rpm, find the number of poles of a motor	3	5	10	12	24
195	To change the direction of rotation of a motor the phase sequence required to be changed from RYB to -----	2	BYR	RBY	BRY	All of these
196	Which of the following induction motor has the highest starting torque?	2	Squirrel cage induction motor	Slip ring induction motor	Same in both induction motor	None of these
197	A 4 pole 50 Hz induction motor is running at 1470 rpm. Calculate the slip	2	0.2	0.02	0.04	0.4
198	The full-load copper loss of a transformer is 1600 W. At half-load, the copper loss will be	4	6400 W	1600 W	800 W	400 W
199	One coulomb charge is equal to the charge on	1	6.24×10^{18} electrons	6.24×10^{24} electrons	6.24×10^{18} atoms	None of the above
200	The correct relation between energy and charge is	4	Energy = Voltage / Charge	Charge = Energy * Voltage	Energy = Voltage (Charge) ^{0.5}	Energy = Voltage* Charge
201	Two capacitor each of capacitance C and breakdown voltage V are joined in series. The capacitance and breakdown voltage of the combination is	1	0.5 C & 2 V	0.5 C & 0.5V	C & V	2 C & 2 V

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
202	Two capacitor of $1\mu\text{F}$ and $2\mu\text{F}$ capacitance are connected in parallel across a 30 V dc battery. After the capacitors have been charged, the charges across the two capacitors will be	3	30 μC each	60 μC each	30 μC and 60 μC respectively	60 μC and 30 μC respectively
203	Two capacitor of $1\mu\text{F}$ and $2\mu\text{F}$ capacitance are connected in series across a 30 V dc battery. After the capacitors have been charged, the charges across the two capacitors will be	2	10 μC each	20 μC each	10 μC and 20 μC respectively	20 μC and 10 μC respectively
204	In practical voltage source, the terminal voltage	2	Cannot be less than source voltage	Cannot be higher than source voltage	Is always less than source voltage	Is always equal to source voltage
205	An ideal current source has	1	Infinite source resistance	Zero source resistance	Large value of source resistance	Finite value of source resistance
206	Kirchhoff's laws are applicable to	4	DC only	As sinusoidal wave only	DC and AC sinusoidal waves	All wave shapes
207	When determining Thevenin's resistance of a circuit	4	All sources must be open circuited	All sources must be short circuited	All voltage sources must be open circuited and all current sources must be short circuited	All sources must be replaced by their internal resistances
208	A source is delivering maximum power to resistance through a network. The ratio of power delivered to the source power	2	Is always 0.5	May be 0.5 or less	May be 0.5 or less or more	May be 0.5 or more
209	Three resistance of 15Ω each are connectd in delta. The resistance of equivalent star will have a value of	2	12 Ω	5 Ω	5/3 Ω	45 Ω
210	Two voltage are $v_1 = 100 \sin(\omega t + 15^\circ)$ and $v_2 = 60 \cos \omega t$, then	3	v_1 is leading v_2 by 15°	v_1 is leading v_2 by 75°	v_2 is leading v_1 by 75°	v_2 is leading v_1 by 15°
211	In a purely inductive circuit the current _____ the voltage by _____	3	Lags, 0°	Leads, 90°	Lags, 90°	Lags, 45°
212	In a purely capacitive circuit the current _____ the voltage by _____	2	Lags, 0°	Leads, 90°	Lags, 90°	Lags, 45°
213	A bulb rated at 60W, 120 V is used for 30 minutes. The charge associated with this	2	3600 C	900 C	7200 C	60 C
214	Which tariff is used by the small commercial consumers	2	Maximum demand tariff	Block rate tariff	Three part tariff	Tow part tariff
215	Two part tariff is charged on what vasis	4	Connected load	Units consumed	Maximum demand	Both 2 & 3
216	What is the main disadvantage of two port tariff	2	He has to pay semi fixed charges	He has to pay fixed charges	He has to pay running charges	None of the above
217	What all are included in the three part tariff	4	Fixedcharges	Running charges	Semi fixed charges	All of the above
218	Why is a big consumer charged at a lower rate than the small consumer	2	Their maximum demand is small	It improves the load factor	Both of Theses	None of the above

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
219	What is the consequence of low power factor	3	Increases the rating of station equipments only	Only line losses increase	Both of These	None of the above
220	Which tariff is also known as the average power factor tariff	1	Sliding scale tariff	kW tariff	kVAR tariff	kVA maximum demand tariff
221	For which among the following consumers is penalty imposed for low power factor	2	Residential and commercial consumers	Industrial consumers	Agricultural consumers	All of the above
222	Thevenin's theorem cannot be applied if the network ____	2	Is Bilateral	Is Unilateral	Contains Inductor	Contains Capacitor
223	The delta connection always forms a _____	2	Open Circuit	Loop	Short Circuit	None of the above
224	When 1.6Ω resistor and 120Ω resistor are connected in parallel, the total resistance is _____	1	Less than 120 Ω but greater than 100Ω	Less than 100Ω	Greater than 1.6Ω	Less than 1.6 Ω but greater than 120Ω
225	For Kirchhoff's current law	4	The direction of incoming and outgoing currents are same	The direction of incoming and outgoing currents are different	No direction to any of the current	Total sum of current meeting at the junction is zero
226	In a series RC circuit, when the frequency and resistance are halved, the impedance _____	2	Doubled	Halved	One fourth	Cannot be determined without values
227	In order to get maximum power transfer from a capacitive source, the load must	2	Have a capacitive reactance equal to circuit resistance	Have an impedance that is the complex conjugate of the source impedance	Be as capacitive as it is inductive	None of the above
228	The Norton's equivalent current is ____	3	The current through the load	The open current from the source	The short circuit current	None of the above
229	If Maximum power transfer theorem is applied to AC circuit, then load will receive maximum power when load impedance is complex conjugate of internal impedance of the source. This means	2	In both impedances resistances and reactance will be same	In both impedances resistances and reactance will be different	In both impedances resistance is same and reactance will be different	In both impedances resistance is different and reactance will be same
230	Which of the following is non linear circuit parameter	1	Transistor	Inductance	Capacitance	Wire wound resistor
231	In order to apply Superposition theorem, it is necessary that the network be only _____	4	Linear and Reciprocal	Time - invariant and Reciprocal	Linear and Time - invariant	Linear
232	All the voltage drops and the voltage sources added together in a series circuit is equal to _____	3	The total of voltage drops	The source voltage	Zero	The total of the source voltage and voltage drops
233	When fourth resistor is connected in series with three series resistor, the total resistance _____	1	Increases	Decreases	Increases by one fourth	Doubled
234	A 680 Ω load resistor R_1 is connected across 1.2 A current source. The internal source resistance is 12kΩ, the load current is _____	4	0A	1.2 A	114 mA	1.14 A
235	Two resistors are connected in series 5 ohm and 10 ohm with 75V source. What is the voltage across 5 ohm resistor?	2	50 V	25 V	2.5V	5 V

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
236	Approximately how much current flows through a circuit with a 40 V source and 6.8 k ohm of resistance?	2	4.5 mA	5.9 mA	5.5 mA	59 mA
237	If internal resistance of the voltage source is unknown, it is replaced by ____ while applying theorems.	2	Open circuit	Short circuit	Delta circuit	None of the above
238	Approximately how much current flows through a circuit with a 30 V source and 4 k ohm of resistance?	1	7.5 mA	7.2 mA	5.9 mA	2.72 mA
239	Resistance of a tungsten lamp _____ as applied voltage increases	2	Decreases	Increases	Remains same	None of the above
240	A delta circuit has each element of value R/2. The equivalent element of star circuit will be	1	R/6	R/3	2R	3R
241	Two infinite long parallel conductor in vacuum and separated 1 m between centre when a current of 1 A flows through each conductor produces on each other a force of	4	2×10^{-2} N/m	2×10^{-3} N/m	2×10^{-5} N/m	2×10^{-7} N/m
242	In a 3 phase system, the voltages are separated by	3	45°	90°	120°	180°
243	In a certain Y-Y system, the source phase currents each have a magnitude of 9 A. The magnitude of each load current for a balanced load condition is	3	3A	12A	9A	27A
244	A transformer core is laminated to	2	Reduce hysteresis loss	To reduce eddy current loss	To reduce copper loss	To reduce all of these losses
245	The no load current drawn by transformer is usually what ----- percent of the full load current.	2	0.2 to 0.5	2 to 5	10 to 17	23 to 35
246	The path of a magnetic flux in a transformer should have	4	High resistance	High reluctance	Low resistance	Low reluctance
247	The armature core of a D.C. generator is usually made of	1	silicon steel	copper	non-ferrous material	cast-iron
248	The size of a conductor used in power cables depends on the	3	Operating voltage.	Power factor.	Current to be carried.	type of insulation used.
249	Auto transformer makes effective saving on copper and copper losses, when its transformation ratio is equal to	4	Very low	Less than one	Greater than one	Approximately one
250	The frequency of a voltage at the secondary is	2	greater than the primary	equal to primary	less than primary	any of these
251	If frequency is 50 Hz and speed is 500 rpm, find the number of poles of a motor	3	5	10	12	24
252	To change the direction of rotation of a motor the phase sequence required to be changed from RYB to -----	2	BYR	RBY	BRY	All of these

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
253	Which of the following induction motor has the highest starting torque?	2	Squirrel cage induction motor	Slip ring induction motor	Same in both induction motor	None of these
254	A 4 pole 50 Hz induction motor is running at 1470 rpm. Calculate the slip	2	0.2	0.02	0.04	0.4
255	The torque of an induction motor is	1	directly proportional to slip	inversely proportional to slip	proportional to the square of the slip	none of these
256	The full-load copper loss of a transformer is 1600 W. At half-load, the copper loss will be	4	6400 W	1600 W	800 W	400 W
257	A split phase motor has high starting torque.	2	True	False		
258	If 10 μ F, 20 μ F, 22 μ F, and 100 μ F capacitor are in parallel. The total capacitance is 152 μ F.	1	True	False		
259	If 1 A current flows in a circuit, the number of electrons flowing through this circuit is	1	0.625×10^{19}	1.6×10^{19}	1.6×10^{-19}	0.625×10^{-19}
260	Sulphation in a lead acid battery occurs due to	4	heavy charging.	fast charging.	trickle charging.	incomplete charging
261	Cork Screw rule is used to find	1	direction of current.	direction of magnetic field.	direction of electric field.	direction of emf.
262	What is mean by ALU	4	Arithmetic logic upgrade	Arithmetic logic unsigned	Arithmetic local unsigned	Arithmetic logic unit
263	What is the difference between two part tariff and maximum demand tariff?	2	A separate meter is used	A separate maximum demand meter is used	Semi fixed charges are also included	All of these
264	Which among the following happens in a low power factor?	4	Large kVA rating of the equipment.	Greater conductor size.	Reduced handling capacity of the system.	All of the above.
265	Phase advancers are used for which among the following machines?	3	Transformers	Synchronous machines	Induction motors	DC machines
266	The most suitable location for the power factor improvement device is	4	Near the electrical appliance which is responsible for the poor power factor.	At the sending end.	At the receiving end in case of transmission lines.	None of the above
267	What is / are the main disadvantage / s of using oil as the quenching medium in the circuit breakers?	4	Need periodical replacement.	Risk of formation of explosive mixture with air.	Possibility of causing fire hazards.	All of the above.
268	Which of the following circuit breaker is highly reliable and has a least maintenance?	4	Oil circuit breakers	Air blast	Vacuum circuit breakers	SF6 circuit breakers
269	For which among the following the current ratings are not required?	1	Circuit breakers	Relays	Isolators	Load break switch
270	Why are the isolators used?	3	Break abnormal current	Making under fault conditions	Breaking the circuit under no load condition	None of the above
271	What is the major cause of the failure of the circuit breaker?	4	Trip circuit open	Trip latch defective	Spring defective	All of these
272	In Scott connection, the voltage across the teaser leads the mains by	3	30 degree	60 degree	90 degree	120 degree

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
273	In double delta transformation, a double delta refers to the case where there are two delta transformations in	2	Parallel	Series	Both series and parallel	Neither series nor parallel
274	The fusing current of a fuse depends on its	4	Material and its length	Length and its diameter	Material and diameter	Material, length and diameter
275	In delta connected system, the potential difference between line outers is	1	Equal to the phase voltage	Greater than the phase voltage	Less than the phase voltage	None of these
276	The two wattmeter method is applicable for	3	Only star connected system	Only delta connected system	Both star connected and delta connected system	None of these
277	In a balanced 3-phase system, if one of the two wattmeter's reading is negative then the	2	Reading should be taken as it is	Reading should be taken after reversing the pressure coil	Reading should be taken after reversing the current coil	All of these
278	From full load to no load, the change of terminal voltage is more in case of	4	Lagging power factor	Leading power factor	Leading power factor	Both lagging and leading power factor compared to unity power factor
279	The synchronous generator is also called an	2	AC generator	Alternator	DC generator	Only (a) and (b)
280	Copper losses occurs due to ohmic resistance in	3	Primary winding	Secondary winding	Both primary and secondary winding	None of these
281	Slip of an induction motor increases with	2	increase in current and decrease in torque	increase in current and torque	decrease in current and torque	decrease in current and increase in torque
282	The amount of work done in moving a charge from one point to another along an equipotential line or surface charge is	1	Zero	Infinity	One	Two
283	When the motor runs on no load, then	1	Back emf is almost equal to applied voltage	Back emf will be greater than applied voltage	Back emf will be less than applied voltage	None of these
284	The field winding of dc series motor consists of few turns of	2	Thin wire with low resistance	Thick wire with low resistance	Thin wire with high resistance	Thick wire with high resistance
285	The power absorbed by a pure inductive circuit and pure capacitive circuit is	4	Zero and non zero	. Non zero and zero	Non zero and non zero	Zero and zero
286	For solving parallel ac circuit, the method used is	4	Vector method	Admittance method	Symbolic or j - method	All of these
287	The fusing current of a fuse depends on its	4	Material and its length	Length and its diameter	Material and diameter	Material, length and diameter
288	For extinguishing arc in an high voltage fuses, the element can be immersed in	4	Oil	Carbon tetrachloride	Carbon tetrafloride	Only (a) and (b)
289	In delta connected system, the potential difference between line outers is	1	Equal to the phase voltage	Greater than the phase voltage	Less than the phase voltage	None of these
290	In order to bring the pointer to rest within a short time,	2	Gravity control is required	Damping control is required	Spring control is required	All of these

General Electrical Engineering

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
291	Among the following damping method, the most effective and efficient damping is	3	Air friction damping	Fluid friction damping	Eddy current damping	None of these
292	The moving system of induction type single - phase energy meter consists of	4	One pointer and two control spring	Two pointer and two control spring	Two pointer and two control spring	No pointer and no control spring
293	Total electric flux through any closed surface is equal to the charge enclosed by that surface ". This is	2	Lenz's law	Gauss's law	Maxwell's law	Faraday's law
294	Gauss's law is applicable for	3	Only point charge	Infinite line charge	Infinite sheet of charge	All of these
295	The potential difference between two points is given by	2	$V = E / Q$	$V = W / Q$	$V = Q / E$	$V = Q / W$
296	From full load to no load, the change of terminal voltage is more in case of	4	Lagging power factor	Leading power factor	Unity power factor	Both lagging and leading power factor compared to unity power factor
297	The synchronous generator is also called an	4	AC generator	Alternator	DC generator	Only (a) and (b)
298	In India, the synchronous generator generates	4	11 kilo - volts	33 kV	66 kV	Either (a) or (b)
299	The non salient pole type synchronous generator is driven by	3	Hydraulic turbines	Diesel engines	Steam engines	All of these
300	Copper losses occurs due to ohmic resistance in	3	Primary winding	Secondary winding	Both primary and secondary winding	None of these

Transmission & Distribution

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
1	An over current relay having a current setting of 125 % is connected to a supply circuit through a current transformer of ratio 400/ 5. The pickup value will be amps	4	6.3	6.35	6.2	6.25
2	Liquids dielectrics are mainly used as	4	Impregnants in high voltage cables	In capacitors	For filling up transformers	All of these
3	The square root of the ratio of the line impedance and shunt admittance is called.	1	Surge impedance loading of line	Conduction of the life	Regulation of line	None of above
4	Which theory explains the mechanism for breakdown under different conditions?	4	Townsend theory	Streamer theory	Clump theory	Only (a) and (b)
5	Why are conduit pipes employed?	1	To protect unsheathed cables	Armoured cables	PVC sheathed cables	All of these
6	Why are sheaths used in cables?	3	Provide proper insulation	Provide mechanical strength	Prevent ingress of moisture	None of these
7	Transmission of power by ac cables is impossible beyond	1	35 – 45 km	500 km	300 km	10 – 15 km
8	When is the Ferranti effect on the long transmission lines experienced?	1	The line is lightly loaded.	The line is heavily loaded.	The line is fully loaded.	The power factor is unity.
9	When does the Ferranti effect happen on the transmission line?	3	When the line is short and loaded.	When the line is long and loaded.	When the line is long and unloaded.	None of these.
10	Transmission efficiency of a transmission line increases with the	2	decrease in power factor and voltage.	increase in power factor and voltage.	increase in power factor but decrease in voltage.	increase in voltage and decrease in power factor.
11	At no load condition a shunt inductive reactor is connected at the receiving end of the line to limit the receiving end voltage to be equal to the sending end voltage. What is the ohmic value of the reactor?	2	Infinity	2000 Ω	105.26 Ω	1052.6 Ω
12	In a transmission line the distributed constants are:	4	Resistance and Capacitance	Capacitance and Inductance	Resistance, Inductance, and Capacitance only	Resistance, Inductance, Capacitance and Shunt Capacitance
13	The output voltage of constant voltage transformer contains excessive harmonics which can be filtered out by using	3	RC filter	RL filter	LC filter	None of these
14	In Scott connection, the voltage across the teaser leads the mains by	3	30 degree	60 degree	90 degree	120 degree
15	Dipsticks are used for the	4	Pressure measurement	Flow measurement	Displacement measurement	Level measurement
16	Capacitive devices are used for the level measurement of	3	Only liquid	Solid in powdered form	Both (a) and (b)	None of these
17	The measurement range of digital voltmeter is	1	1V to 1MV	1V to 1kV	1kV to 1MV	100 kV to 100MV
18	The full range of audibility in audio frequency oscillator is	2	0 to 20 Hz	20 Hz to 2 kHz	20 Hz to 20 kHz	20 Hz to 20 MHz
19	In function generator, the output waveform of integrator is	3	Sinusoidal	Square	Triangular	Saw-tooth
20	Which state in India does not follow IE (Indian Electricity rules)?	2	Sikkim	Jammu Kashmir	Nagaland	Mizoram
21	Which rule deals with the supply to X- rays and high frequency installations?	3	Rule 30	Rule 39	Rule 73	Rule 51
22	The power MOSFET device is a	2	Current controlled unipolar device	Voltage controlled unipolar device	Current controlled bipolar device	Voltage controlled bipolar device
23	The conduction losses in IGBT is	2	More than that of MOSFET	Lower than that of MOSFET	Equal to that of MOSFET	Equal to that of BJT

Transmission & Distribution

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
24	Pantograph collector is used in railways where the train runs at 100 to 130 kmph. Which among the following is true about pantograph collector?	4	It is unidirectional	The erection of the overhead network is complicated	Its height cannot be varied	None of these
25	A low frequency supply is given to the single phase AC system for track electrification because	4	It improves commutation	Increases efficiency	Improves power factor	All of these
26	In routine tests, the cable is tested by applying an ac voltage of	2	2 times the rated value	2.5 times the rated value	3 times the rated value	3.5 times the rated value
27	While performing temperature rise tests, at any part of the bushing the steady temperature rise above the ambient air temperature should not exceed	4	20 °C	25 °C	35 °C	45 °C
28	The tests which is not performed under power frequency tests is	4	Partial discharge tests	Momentary withstand test	Visible discharge tests	Full wave withstand tests
29	Series capacitance voltmeters were used with cascade transformers for measuring rms values up to	4	100 kV	500 kV	800 kV	1000 kV
30	A network containing 100 buses in which 10 are the voltage control buses, 5 are fixed shunt capacitor buses, 20 are reactive power support buses, 6 are the generator buses. Find the size of the jacobian matrix ?	1	163 x 163	164 x 164	165 x 165	162 x 162
31	The accuracy of the ac field strength depends on	4	Harmonic content	Atmospheric conditions	Position of meter	All of these
32	A generating voltmeter is a	1	Variable capacitor electrostatic voltage generator	Constant capacitor electrostatic voltage generator	Variable inductor electrostatic voltage generator	Constant inductor electrostatic voltage generator
33	A transmission line has a reactance of 1 Pu is operating at $V_s = V_r = 1$ Pu. The generator is connected at source end which is delivering 0.5 Pu of active Power. Find the load angle?	2	35°	30°	45°	60°
34	In Van de Graaff generators, the shape of high voltage electrode is nearly spherical to avoid	4	High surface field gradients	Corona	Local discharges	All of these
35	The voltage doubler circuit is suitable for the voltage up to	2	2V	4V	6V	8V
36	For insulators and bushings of power transformers, circuit breakers and instrument transformers, the suitable materials is	3	Epoxy resin	Polyesters resins	Porcelain	Silicon rubber
37	SF6 Circuit breakers are manufactured up to the voltage of	4	33 kV	66kV	480 kV	800 kV
38	The temperature limit for class F insulation is	4	105°C	120°C	130°C	155°C
39	The thermal breakdown stresses are	1	Lower under ac conditions than under dc condition	Greater under ac condition than dc condition	Equal in both condition	None of these
40	In A.S.C.R. conductor the function of steel is to	1	Provide additional mechanical strength	Prevent corona	Take care of surges	Reduce inductance and subsequently improve power factor
41	What is the value of capacitance to neutral for the two wire line?	1	Twice the line to line capacitance	Equal to line to line capacitance	Thrice the line to line capacitance	Half of line to line capacitance
42	What happens in case of capacitance of line to ground, if the effect of earth is taken into account?	2	Capacitance of line to ground decreases	Capacitance of line to ground increases	The capacitance remains unaltered	The capacitance becomes infinite
43	Capacitance between the two conductors of a single phase two wire line is $0.5 \mu F/km$. What is the value of capacitance of each conductor to neutral?	2	$0.5 \mu F / km$	$1 \mu F / km$	$0.25 \mu F / km$	$2.0 \mu F / km$
44	What is the safe working temperature for a conductor in case of armoured cables?	3	50° C	75° C	65° C	40° C

Transmission & Distribution

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
45	The capacitances of a 3 phase belted cable are 12.6 μ F between the three cores bunched together and the lead sheath and 7.4 μ F between one core and the other two connected to sheath. What will be the charging current drawn by the cable when connected to a 66 kV supply?	4	100 A	99.3648 A	105.236 A	107.74 A
46	In a 3 core cable, the capacitance between two conductors is 3 μ F. What will be the capacitance per phase?	3	1.5 μ F	3 μ F	6 μ F	12 μ F
47	What does capacitance grading of cables mean?	3	Use of dielectrics in different concentrations	Introduction of capacitance at various lengths of cable to counter the effect of inductance	Use of dielectrics of different permittivities	Grading according to capacitance per km length of the cable
48	What happens in a long transmission lines under no load?	2	The receiving end voltage is less than the sending end voltage.	The sending end voltage is less than receiving end voltage	The sending end voltage is equal to receiving end voltage.	None of these
49	The transmission lines above what length is termed as the long lines?	2	More than 100 km	150 km and above	250 km and above	Less than 100 km
50	In the nominal p method which among these are divided into two halves?	2	Series impedance	Shunt capacitance	Both (A) and (B)	None of these
51	What are the A and D parameters in case of medium transmission line (nominal T method)?	1	$A = D = 1 + (YZ / 2)$	$A = D = 1 + (YZ / 2) * Z$	$A = D = (YZ / 2)$	$A = D = (YZ / 2) * Y$
52	Which among the following methods are used for the calculation of solution of a medium transmission line?	4	End condenser method	Only T method	Only p method	All of these
53	A line of what length can be classified as a medium transmission line?	2	90 – 100 km	50 – 150 km	150 – 200 km	Above 200 km
54	The ABCD constants of a 3 phase transposed transmission line with linear and passive elements	3	are always equal	never equal	only A and D are equal	only B and C are equal
55	What are the values of A, B, C, D parameters of a short transmission line?	3	Z, 0, 1, 1	0, 1, 1, 1	1, Z, 0, 1	1, 1, Z, 0
56	What is the line length if a load of 15000 kW at a power factor 0.8 lagging can be delivered by a 3 phase transmission line having conductors each of resistance 1 Ω per kilometre? The voltage at the receiving end is to be 132kV and the loss is about 5%.	2	40.13km	37.18km	40.18km	42.38km
57	For a short line if the receiving end voltage is equal to sending end voltage under loaded conditions	4	The sending end power factor is unity.	The receiving end power factor is unity.	The sending end power factor is leading.	The receiving end power factor is leading.
58	Single phase transmission line of impedance $j0.8$ ohm supplies a resistive load of 500 A at 300 V. The sending end power factor is	4	Unity	0.8 lagging	0.8 leading	0.6 lagging
59	What is the power factor angle of the load for maximum voltage regulation?	3	$\tan^{-1}(X/R)$	$\cos^{-1}(X/R)$	$\tan^{-1}(R/X)$	$\cos^{-1}(R/X)$
60	For a zero voltage regulation the PF is	2	0	$\tan^{-1}(R/X)$	$\tan^{-1}(X/R)$	1
61	If the % reactance upto the fault point is 20% then shortcircuit current will be ----- times the full load current	2	2	5	2.5	10
62	In the modelling of short length overhead transmission line, why is the line capacitance to ground not considered?	2	Equal to zero	Finite but very small	Finite but very large	Infinite
63	The capacitance effect can be neglected in which among the transmission lines?	1	Short transmission lines	Medium transmission lines	Long transmission lines	All of these

Transmission & Distribution

Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
64	On what concept is electrically short, medium and long lines based?	2	Nominal voltage of the line	Physical length of the line	Wavelength of the line	Power transmitted over the line
65	If the double circuit 3 phase line has conductors of diameter 2 cm and distance of separation 2m in hexagonal spacing. What is the phase to neutral capacitance for 150 km of line?	2	2.4939 μ F	3.7408 μ F	1.8245 μ F	3.2548 μ F
66	What will be the capacitance of a 100 km long, 3 phase, 50Hz overhead transmission line consisting of 3 conductors, each of 2 cm and spaced 2.5 m at the corners of an equilateral triangle?	1	1.007 μ F/phase	2.0075 μ F/phase	2.5 μ F/phase	1.45 μ F/phase
67	What happens if the separation between the three phases of the transmission line is increased?	3	The inductance will increase and capacitance will remain unchanged.	Both inductance and capacitance will decrease.	Inductance will increase and capacitance will decrease.	Inductance will decrease and capacitance will increase.
68	A two conductor single phase line operates at 50Hz. Diameter of each conductor is 20mm and the spacing between the conductors is 3m. The height of the conductors above the ground is 6m. What is the capacitance of the line to neutral?	1	9.7 pF/m.	10.8 pF/m.	3.57 pF/m.	2.415 pF/m.
69	How many cores are used in a cable for the transmission of voltages upto 66 kV?	3	Single core	Two core	Three core	All of the above
70	What is the percentage of added materials like sulphur, zinc lead etc in vulcanised rubber?	2	5 – 10 %	3 – 5 %	4 – 8 %	10 – 12 %
71	What is empire tape?	4	Impregnated paper	Vulcanised rubber	Enamel insulation	Varnished cambric
72	What is the dielectric strength of impregnated paper?	1	30 kV/mm	20 kV/mm	15 kV/mm	5 kV/mm
73	What is the limit of the conductor cross section when paper insulation is used?	3	50 mm ²	250 mm ²	600 mm ²	1200 mm ²
74	What is the main drawback of using paper as the insulating material?	1	Is hygroscopic	Has poor dielectric strength	Has a very low insulation resistivity	Has high capacitance
75	The insulation resistance of a cable of length 10 km is 1M Ω . For a length of 100 km of the same cable, what will be the insulation resistance?	3	1 M Ω	10 M Ω	0.1 M Ω	0.01 M Ω
76	The thickness of insulation provided on the conductor in the cable depends on which among the following factor?	1	Operating voltage	Current to be carried	Power factor	Both (a) and (b)
77	A layer similar to bedding is provided on the armouring to protect the whole cable from all atmospheric conditions. Which layer is this?	3	Insulation	A layer of jute	Serving	Sheath
78	The armature of a DC generator has a 2 layer lap winding in 72 slots with 6 conductor per slot. What is the minimum no. of commutator bars required for the armature	3	72	432	216	36
79	Armouring is provided above the bedding. The armouring consists of one or two layers of which wire or tape?	1	Galvanised steel wire	Thin wires of copper	Wires of aluminium	Wire made of both copper and cadmium
80	What is the total charging current per phase for a 33 kV, 50 Hz, 3 phase underground cable of 4 km length using 3 single core cables? Each conductor has a diameter of 2.5 cm and the radial thickness of insulation is 0.5 cm.	2	15.28 A	11.87 A	13.85 A	8.25 A

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
81	A single core cable has a conductor diameter of 1 cm and the internal sheath diameter of 1.8 cm. If impregnated paper of relative permittivity 4 is used as the insulation, calculate the capacitance for 1 km length of cable?	1	0.378 μ F	0.257 μ F	0.549 μ F	0.78 μ F
83	On which factor does the capacitance of the cable depend?	4	Length of cable	Relative permittivity of dielectric used in cable	Ratio of sheath diameter and core diameter	All of the above
84	Why solid type of conductors is not preferred for the voltages exceeding 66 kV?	1	A danger of breakdown of insulation	Skin effect dominates the conductor	There is corona loss between conductor and sheath material	Insulation melts due to overheating
85	For a distortion less transmission line (G = shunt conductance between two wires)	1	R/L =G/C	RL =GC	RG=LC	RLGC =0
86	What is the gas pressure of SF ₆ for a compressed gas insulated cable?	3	10 – 20 mm Hg	80 – 100 mm Hg	3 – 5 kg / cm ²	0 – 50 kg / cm ²
87	What is the advantage(s) of screened type over the belted cables?	4	Reduced possibility of core to core faults	Increased current carrying capacity	No possibility of formation of voids within the dielectric	All of the above
88	What is / are the advantages of using H-type cables?	2	The metallic screens assist in complete impregnation of the cable with the compound	The metallic screens increase the heat dissipating power of the cable	The lead sheaths in H type are thicker than S.L type cables	All of these
89	The cable best suited for the transmission of voltages from 33 kV to 66 kV is _____.	2	Belted cables	Screened cables	Pressure cables	None of these
90	Why the belted type cable constructions are not suitable for voltages exceeding 22 kV?	4	Development of both radial and tangential stress	Formation of vacuous spaces and voids on loading and unloading owing to non homogeneity of dielectric in belted construction	Local heating caused by power loss at the centre filling	All of the above
91	Which material is suitable for the manufacture of armour in a single core cable?	3	Magnetic material	Non magnetic and non conducting material	Non magnetic and conducting material	Magnetic and non conducting material
92	Which among the following cables are generally suited for the voltages upto 11 kV?	1	Belted cables	Screened cables	Pressure cables	None of these
93	Why is the single core cables not provided with armouring?	1	Avoids excessive loss in the armour	Make the cable more flexible	Make the cable non hygroscopic	None of the above
94	How many cores are used in a cable for the transmission of voltages upto 66 kV?	3	Single core	Two core	Three core	All of the above
95	What is the percentage of added materials like sulphur, zinc lead etc in vulcanised rubber?	2	5 – 10 %	3 – 5 %	4 – 8 %	10 – 12 %
96	The pressure of SF ₆ gas in Circuit Breaker is of the order _____	3	100mm Hg	1Kg/cm sq	3 to 5 Kg/cm sq	30 to 50 Kg/cm sq
97	What is the dielectric strength of impregnated paper?	1	30 kV/mm	20 kV/mm	15 kV/mm	5 kV/mm
98	What is the limit of the conductor cross section when paper insulation is used?	3	50 mm ²	250 mm ²	600 mm ²	1200 mm ²
99	Fusing factor for HRC fuses is	1	Minimum fusing current /Current Rating	Minimum fusing current /Minimum rupturing time	Maximum fusing current/Minimum fusing current	Minimum fusing current /Prospective current of circuit

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
100	A system having connected load of 100 KW , Peak Load of 80 KW , Base Load of 20 KW and average Load of 40 KW will have a Load factor of	2	40%	50%	60%	80%
101	The Surge Impedance for over head line is taken as	3	10-20 ohms	50-60 ohms	100-200 ohms	1000-2000 ohms
102	Total Load transmitted through a three phase transmission line is 10000 KW at 0.8 p.f. Lagging the IR Losses are 900 KW .The efficiency of Transmission Line is	2	60%	90%	95%	99%
103	In a 6 pole DC machine 90 mechanical digrees coressponds to ----- Electrical digrees	4	30	180	45	270
104	Armouring is provided above the bedding. The armouring consists of one or two layers of which wire or tape?	1	Galvanised steel wire	Thin wires of copper	Wires of aluminium	Wire made of both copper and cadmium
105	What is the purpose of bedding on the underground cables?	4	To avoid leakage of current.	To protect the sheath against corrosion.	To protect the sheath from mechanical injury due to armouring.	Both (b) and (c)
106	Determine the average demand of plant if its load factor and maximum demand are 0.60 and 30 MW	2	20MW	18 MW	50 MW	13 MW
107	A generating station has a connected load of 55MW and maximum demand of 20 MW .What is the demand factor	2	0.4785	0.3636	2.75	1100
108	The maximum demand on power system is 100 MW If the annual load factor is 40% calculate the total energy generated in a year	3	3761*105 kWh	4174* 105 kWh	3504 *105 kWh	3500*105 kWh
109	Neglecting losses in transmission system . If the voltage is doubled , for the same power transmission, the weight of conductor material required will be	4	four times	double	Half	one forth
110	visual critical voltage is _____ than disruptive critical voltage	1	greater	lesser	equals	two times
111	for protection against synchronising power surges which relay is used	4	split phase relay	impedance relay	reactance relay	mho relay
112	Percentage differential protection is used to prevent against _____	4	interturn fault	External Fault	heavy loads	magnetising current
113	According to CEA regulation 2010 which type of fire protection is used for power transformers	4	water injection	forced air system	water and forced air system	N2 injection Kit
114	Load factor for the period 6-24 hours period is	2	0.438	0.5	0.876	1
115	The power station has annual load factor of 50 % and capacity factor of 44% if the maximum demand is 15 MW the reserve capacity of plant is -----kW	3	1250	2500	3750	4750
116	If the voltage across the units in a two unit suspension insulator is 60 % and 40 % resp. of line voltage , the ratio of capacitance of the insulator to that of its capacitance to earth will be	2	0.05	0.5	0.65	0.75
117	An industrial consumer has a load pattern of 2000kw 0.8 lag for 12 hrs 1000 kw unity power factor for 12 hrs . What is the load factor	4	1	0.75	0.67	0.5

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
118	A THERMAL GENERATING station has a installed capacity of 15MW and supplies a daily load of 10MW FOR 12 hours and 5 MW for remaining 12 hours . The plant capacity for this station is	4	1	0.75	0.67	0.5
119	The inductance of a singal face two wire line is given by (D is the distance between conductors & 2v is the diameter of conductor)	1	0.4 log (D/r) mH/ km	0.55log (D/r) mH/ km	0.4 log (R/d) mH/ km	0.55 log (R/d) mH/ km
120	For high voltage ac circuit brakers, the rated short circuit current is passed for	3	0.01 Sec	0.1 Sec	3 sec	30 sec.
121	Which of the following is /are the charecteristics of negative feedback control system	4	Low sensitivity to parameter variation	Reduction in gain at the expense of better stability	Regjection of distrubance signals	all of the above
122	In load flow Studies PV bus is treated as PQ bus when	3	Phase angle become high	voltage at he bus become high	reactive power goes beyond limit	any of the above
123	The charging reactance of 50 km transmission line is 1500 OHMS what is the charging raactance for 100 KM length of line	3	1500	3000	750	1000
124	The material generally used for armour of high voltage cables is	2	aluminium	steel	brass	copper
125	Overhead lines generally use	3	copper conductors	all aluminium conductors	A.C.S.R. conductors	none of these
126	The power factor of industrial loads is generally	2	unity	lagging	leading	zero
127	High voltage transmission lines use	1	suspension insulators	pin insulators	both 1 and 2	none of the above
128	The distributors for residential areas are	3	single phase	three-phase three wire	three-phase four wire	none of the above
129	Most of the high voltage transmission lines in India are	2	underground	overhead	either of the above	none of the above
130	The voltage of the single phase supply to residential consumers is	3	110 V	210 V	230 V	400 V
131	The usual spans with R.C.C. poles are	3	40—50 meters	60—100 meters	80—100 meters	300—500 meters
132	Galvanized steel wire is generally used as	4	stay wire	earth wire	Structural component	all of above
133	By which of the following systems electric power may be transmitted?	3	Overhead system	Underground system	Both 1 & 2	None of the above
134	SAG depends on what factors in transmission lines:	4	Span length	tension in the conductors	Weight of the conductor per unit length	All the above
135	Effect of Temperature rise in overhead lines is to:	1	Increases the SAG and decreases the Tension of lines	Decreases the SAG and Increases the Tension of lines	Increase in both SAG and Tension of the lines	Decreases in both the SAG and Tension of the lines
136	Which material is used for manufacturing of ground wire:	4	Aluminum	Steel wire	Cast iron	Galvanised Steel
137	The function of steel wire in the ACSR conductors is to:	2	Compensate for Skin Effect	Provide additional mechanical strenght	Carry large currents	To Reduce Inductance
138	The minimum clearance between the ground and a 220 kV line is about	3	4.3 m	5.5m	7.0 m	10.5m
139	Full form of ACSR is :	1	Aluminum Conductors Steel Reinforced	Anodised Core Steel Reinforced	All Conductors Surface Reinforced	None of These
140	In overhead lines for transmitting power we generally use:	3	Copper Conductors	Aluminum Conductors	ACSR conductors	Galvanized Steel Conductors
141	With the presence of earth in case of overhead lines:	4	Capacitance of the line decreases and Inductance increases	Capacitance of the line increases and Inductance increases	Capacitance and Inductance of the line increases	Only Capacitance of the line Increases

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
142	Which of the following is correct:	2	with increase in the frequency skin effect decreases	skin effect decreases with decrease in the conductor diameter	with increase in the conductor permeability skin effect decreases	with increase in resistivity of the material skin effect increases
143	Skin effect of the conductor results in :	4	decrease in the dc resistance	increase in the dc resistance	decrease in the ac resistance	increase in the ac resistance
144	The Skin Effect of a conductor reduces with increase in the:	4	Cross section of the conductor	Supply frequency	permeability of the conductor	Resistivity of the conductor material
145	On what factor does Skin Effect depends:	4	Cross section of the conductors	Supply Frequency	Permeability of the conductor material	all the above
146	The phenomenon in which the conductor surface carries more current compared to core when alternative voltage is applied is	1	Corona	Skin Effect	Ferranti Effect	Lenz's Law
147	If the frequency of the transmission line increases then:	4	Line resistance increases	Line resistance decreases	Shunt reactance increases	Shunt reactance decreases
148	A 500 KVA 3 Phase transformer has Iron losses of 300W and field load copper loss of 600W the percentage load at which the transformer is expected to have maximum efficiency is -----	2	50%	70.70%	141.40%	200%
149	A 100 KVA 415V (line) star connected synchronous machine generates rated open circuit voltage of 415V at a field current of 10A is equal to rated armature current the per unit saturated synchronous reactance is -----	3	1.731	1.5	0.666	0.577
150	For a salient pole alternator excitation voltage is 1.2 pu. $X_d = 1$, $X_Q = 0.6$ PU. The maximum power develop at rated voltage when excitation fails is	3	1PU	0.5PU	0.33PU	1.2PU
151	In a transmission line the distributed constants are:	4	Resistance and Capacitance	Capacitance and Inductance	Resistance, Inductance, and Capacitance only	Resistance, Inductance, Capacitance and Shunt Capacitance
152	On what factor does Skin Effect depends:	4	Cross section of the conductors	Supply Frequency	Permeability of the conductor material	all the above
153	With the presence of earth in case of overhead lines:	4	Capacitance of the line decreases and Inductance increases	Capacitance of the line increases and Inductance increases	Capacitance and Inductance of the line increases	Only Capacitance of the line Increases
154	The minimum clearance between the ground and a 220 kV line is about	3	4.3 m	5.5m	7.0 m	10.5m
155	The material generally used for armour of high voltage cables is	2	aluminium	steel	brass	copper
156	The phase to phase clearance of a 220 kV line is approximately equal to	2	8.5 m)	6.5 m.		
157	What is the purpose of bedding on the underground cables?	4	To avoid leakage of current.	To protect the sheath against corrosion.	To protect the sheath from mechanical injury due to armoring.	Both (b) and (c)
158	Armouring is provided above the bedding. The armouring consists of one or two layers of which wire or tape?	1	Galvanised steel wire	Thin wires of copper	Wires of aluminium	Wire made of both copper and cadmium
159	The insulation resistance of a cable of length 10 km is $1\text{ M } \Omega$. For a length of 100 km of the same cable, what will be the insulation resistance?	3	$1\text{ M } \Omega$	$10\text{ M } \Omega$	$0.1\text{ M } \Omega$	$0.01\text{ M } \Omega$
160	What is the limit of the conductor cross section when paper insulation is used?	3	50 mm^2	250 mm^2	600 mm^2	1200 mm^2

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
161	What is the dielectric strength of impregnated paper?	1	30 kV/mm	20 kV/mm	15 kV/mm	5 kV/mm
162	What is the percentage of added materials like sulphur, zinc lead etc. in vulcanised rubber?	2	5 – 10 %	3 – 5 %	4 – 8 %	10 – 12 %
163	Which among the following cables are generally suited for the voltages upto 11 kV?	1	Belted cables	Screened cables	Pressure cables	None of these
164	The cable best suited for the transmission of voltages from 33 kV to 66 kV is _____.	2	Belted cables	Screened cables	Pressure cables	None of these
165	What is / are the advantages of using H-type cables?	2	The metallic screens assist in complete impregnation of the cable with the compound	The metallic screens increase the heat dissipating power of the cable	The lead sheaths in H type are thicker than S.L type cables	All of these
166	The charging current drawn by the cable _____.	3	Lags behind the voltage by 90°	Leads the voltage by 90°	Are in phase with each other	Leads the voltage by 60°
167	A single core cable has a conductor diameter of 1 cm and the internal sheath diameter of 1.8 cm. If impregnated paper of relative permittivity 4 is used as the insulation, calculate the capacitance for 1 km length of cable?	1	0.378 μ F	0.257 μ F	0.549 μ F	0.78 μ F
168	What is the total charging current per phase for a 33 kV, 50 Hz, 3 phase underground cable of 4 km length using 3 single core cables? Each conductor has a diameter of 2.5 cm and the radial thickness of insulation is 0.5 cm.	2	15.28 A	11.87 A	13.85 A	8.25 A
169	What is the maximum stress in the insulation for a 33 kV single core cable with a diameter of 1 cm and a sheath of inside diameter 4 cm?	3	50.61 kV / cm rms	45.231 kV / cm rms	47.61 kV / cm rms	49.231 kV / cm rms
170	What will be the insulation thickness for a conductor of diameter 2 cm, with maximum and minimum stress 40 kV / cm rms and 10 kV / cm rms respectively?	2	5 cm	3 cm	2 cm	4 cm
171	What will be the most economical value of diameter of a single core cable to be used on 50 kV, single phase system, when the maximum permissible stress is not exceeding 50 kV / cm?	2	2.52 cm	2.828 cm	3.52 cm	3.82 cm
172	To get a minimum value of stress (g_{max}) what should be the ratio of core diameter to sheath diameter?	1	1 / 2.718	2.178	1 / 3.78	3.78
173	What does capacitance grading of cables mean?	3	Use of dielectrics in different concentrations	Introduction of capacitance at various lengths of cable to counter the effect of inductance	Use of dielectrics of different permittivities	Grading according to capacitance per km length of the cable
174	In a 3 core cable, the capacitance between two conductors is 3 μ F. What will be the capacitance per phase?	3	1.5 μ F	3 μ F	6 μ F	12 μ F
175	The capacitances of a 3 phase belted cable are 12.6 μ F between the three cores bunched together and the lead sheath and 7.4 μ F between one core and the other two connected to sheath. What will be the charging current drawn by the cable when connected to a 66 kV supply?	4	100 A	99.3648 A	105.236 A	107.74 A
176	What is the safe working temperature for a conductor in case of armoured cables?	3	50° C	75° C	65° C	40° C

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
177	capacitance between the two conductors of a single phase two wire line is $0.5 \mu F/km$. What is the value of capacitance of each conductor to neutral?	2	$0.5 \mu F / km$	$1 \mu F / km$	$0.25 \mu F / km$	$2.0 \mu F / km$
178	What happens in case of capacitance of line to ground, if the effect of earth is taken into account?	2	Capacitance of line to ground decreases	Capacitance of line to ground increases	The capacitance remains unaltered	The capacitance becomes infinite
179	What is the value of capacitance to neutral for the two wire line?	1	Twice the line to line capacitance	Equal to line to line capacitance	Thrice the line to line capacitance	Half of line to line capacitance
180	A two conductor single phase line operates at 50Hz. Diameter of each conductor is 20mm and the spacing between the conductors is 3m. The height of the conductors above the ground is 6m. What is the capacitance of the line to neutral?	1	9.7 pF/m.	10.8 pF/m.	3.57 pF/m.	2.415 pF/m.
181	What will be the capacitance of a 100 km long, 3 phase, 50Hz overhead transmission line consisting of 3 conductors, each of 2 cm and spaced 2.5 m at the corners of an equilateral triangle?	1	$1.007 \mu F/phase$	$2.0075 \mu F/phase$	$2.5 \mu F/phase$	$1.45 \mu F/phase$
182	If the double circuit 3 phase line has conductors of diameter 2 cm and distance of separation 2m in hexagonal spacing. What is the phase to neutral capacitance for 150 km of line?	2	$2.4939 \mu F$	$3.7408 \mu F$	$1.8245 \mu F$	$3.2548 \mu F$
183	On what concept is electrically short, medium and long lines based?	2	Nominal voltage of the line	Physical length of the line	Wavelength of the line	Power transmitted over the line
184	The capacitance effect can be neglected in which among the transmission lines?	1	Short transmission lines	Medium transmission lines	Long transmission lines	All of these
185	In a short transmission line, voltage regulation is zero when the power factor angle of the load at the receiving end side is equal to _____.	2	$\tan^{-1}(X/R)$	$\tan^{-1}(R/X)$	$\tan^{-1}(X/Z)$	$\tan^{-1}(R/Z)$
186	What is the power factor angle of the load for maximum voltage regulation?	3	$\tan^{-1}(X/R)$	$\cos^{-1}(X/R)$	$\tan^{-1}(R/X)$	$\cos^{-1}(R/X)$
187	single phase transmission line of impedance $j0.8 \text{ ohm}$ supplies a resistive load of 500 A at 300 V. The sending end power factor is	4	Unity	0.8 lagging	0.8 leading	0.6 lagging
188	What is the line length if a load of 15000 kW at a power factor 0.8 lagging can be delivered by a 3 phase transmission line having conductors each of resistance 1Ω per kilometre? The voltage at the receiving end is to be 132kV and the loss is about 5%.	2	40.13km	37.18km	40.18km	42.38km
189	The ABCD constants of a 3 phase transposed transmission line with linear and passive elements _____.	3	are always equal	never equal	only A and D are equal	only B and C are equal
190	What are the A and D parameters in case of medium transmission line (nominal T method)?	1	$A = D = 1 + (YZ / 2)$	$A = D = 1 + (YZ / 2) * Z$	$A = D = (YZ / 2)$	$A = D = (YZ / 2) * Y$
191	At no load condition a shunt inductive reactor is connected at the receiving end of the line to limit the receiving end voltage to be equal to the sending end voltage. What is the ohmic value of the reactor?	2	Infinity	2000 Ω	105.26 Ω	1052.6 Ω
192	Transmission efficiency of a transmission line increases with the _____.	2	decrease in power factor and voltage.	increase in power factor and voltage.	increase in power factor but decrease in voltage.	increase in voltage and decrease in power factor.
193	In Van de Graaff generators, the shape of high voltage electrode is nearly spherical to avoid	4	High surface field gradients	Corona	Local discharges	All of these

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
194	While performing temperature rise tests, at any part of the bushing the steady temperature rise above the ambient air temperature should not exceed	4	20 °C	25 °C	35 °C	45 °C
195	Pantograph collector is used in railways where the train runs at 100 to 130 kmph. Which among the following is true about pantograph collector?	4	It is unidirectional	The erection of the overhead network is complicated	Its height cannot be varied	None of these
196	The output voltage of constant voltage transformer contains excessive harmonics which can be filtered out by using	3	RC filter	RL filter	LC filter	None of these
197	A power station has a maximum demand of 15000 kW. The annual load factor is 50% and the plant capacity factor 40%. What is the reserve capacity of the plant?	2	1875 kW	3750 kW	6000 kW	7500kW
198	A power station's plant load factor is defined as the ratio of	2	The energy generated to the maximum energy that could have been generated	Average load to Peak load	Minimum load to Peak load	Minimum Load to Average load
199	Insulators in EHV lines are designed based on _____	1	Switching Voltages	Peak Voltages	Corona	Lighting Voltages
200	Base Load of Power Station stands for	4	2-4 hours/day	4-8 hours/day	8-12 hours/day	12-24 hours/day
201	A wire is placed on the top of a transmission line to protect from	2	Surge High Voltage	Direct Lightning Strokes	Indirect Lightning Strokes	Switching over Voltages
202	A wire is placed on the top of a transmission line acts as	4	Acts as a phase wire	Acts as neutral	Acts as a transmission wire	Acts as a ground wire
203	Boosters are basically	3	Inductors	Capacitors	Transformers	Synchronous Motors
204	Conductors for high voltage transmission lines are suspended from towers	2	To reduce clearance from ground	To increase clearance from ground	To reduce wind and snow loads	To take care of extension in length during summer.
205	Transmission efficiency increases as	1	Voltage and power factor both increase	Voltage and power factor both decrease	Voltage increases but power factor decreases	Voltage decreases but power factor increases
206	With same maximum voltage to earth, which ac system (with p.f. 0.8) will require more copper as compared to dc 2 wire system.	4	Single Phase 2 wire (mid point earthed)	Single Phase 3 wire (neutral = 1/2 Outer)	Three Phase three wire	Three Phase four wire (neutral = outer)
207	When alternating current passes through a conductor	2	It remains uniformly distributed throughout the section of conductor	Portion of conductor near the surface carries more current as compared to the core	Portion of conductor near the surface carries less current as compared to the core	Entire current passes through the core of the conductor
208	The fact that a conductor carries more current on the surface as compared to core, is known as	1	Skin Effect	Corona	Permeability	Unsymmetrical Fault
209	The effective resistance of a conductor will be the same as ohmic resistance when,	4	Current is in true sine wave form	Voltage is low	Power factor is unity	Current is uniformly distributed in the conductor cross - section
210	For constant voltage transmission the voltage drop is compensated by installing	1	Synchronous motors	Capacitors	Inductors	All of the above
211	Ten discs usually suggests that the transmission line voltage is	4	11 kV	33 kV	66 kV	132 kV
212	For 66 kV lines the number of insulator discs used are	2	3	5	8	12
213	Pin insulators are normally used up to voltage of about	4	100 kV	66 kV	33 kV	25 kV
214	Strain type insulators are used where the conductors are	3	Dead ended	At intermediate anchor towers	any of the above	none of the above
215	The surge impedance for over head line is taken as	3	10-20 ohms	50-60 ohms	100-200 ohms	1000-2000 ohms

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
216	In transmission system a feeder feeds power to	3	Service Mains	Generating Stations	Distributors	All of the above
217	Guard ring transmission line	2	Improves power factor	Reduces earth capacitance of the lowest unit	reduces transmission losses	Improves regulation
218	The disadvantage of constant voltage transmission is	1	Short circuit current of the system is increased	Load power factor in heavy loads	Large conductor area is required for same power transmission	any of the above
219	When the power is to be transmitted over a distance of 500 km, the transmission voltage should be in the range	4	33 kV - 66 kV	66 kV - 100 kV	110 kV - 150 kV	150 kV - 220 kV
220	The power transmitted will be maximum when	1	Sending end voltage is more	Receiving end voltage is more	Reactance is high	Corona losses are least
221	Neglecting losses in a transmission system, if the voltage is doubled, for the same power transmission, the weight of conductor material required will be	4	Four Times	Double	Half	One Fourth
222	For economy in generation power	2	Diversity factor should be high	Plant utilization factor should be high	Load factor should be high	Load factor and diversity factor should be low
223	Which of the following category of consumers can provide highest load factor?	2	A domestic consumer	A continuous process plant	A steel melting unit using arc furnace	A cold storage plant
224	During summer months the increased load is due to	4	Increased water supply	Vacations in institutions	Increased business activity	Increased use of fans and air conditioners
225	In a system if the base load is the same as the maximum demand, the load factor will be	1	1	zero	Infinity	1 Percent
226	A system having connected load of 100 kW, peak load of 80 kW, base load of 20 kW and average load of 40 kW, will have a load factor of	2	40%	50%	60%	80%
227	Load due to one tonne air conditioner is nearly	3	100W	200 - 500 W	1 kW - 2 kW	5 kW - 10 kW
228	Which domestic utility item has highest power rating?	4	Refrigerator	Ceiling Fan	Tubelight	Electric Iron
229	Transmission lines link	4	Service points to consumer premises	Distribution transformer to consumer premises	Receiving end station to distribution transformer	Generating station to receiving end station
230	Which type of insulators are used on 132 kV transmission lines?	2	Pin type	Disc type	Shackle type	Pin & Shackle type
231	String efficiency can be improved by	4	Using longer cross arm	Grading the insulator	Using a guard ring	any of the above
232	Minimum horizontal clearance of a low voltage transmission line from residential buildings must be	3	11/2 feet	3 feet	4 feet	8 feet
233	If a 66 kV linespasses over a residential building, the minimum vertical clearance from the roof of the building must be	3	8 feet	12 feet	13 feet	16 feet
234	Stranded conductors are used for transmitting, power at high voltages because of	3	Increased tensile resistance	Better wind resistance	Ease in handling	Low cost
235	Load factor for the period 6-24 hours period is	2	0.438	0.5	0.876	1
236	Which plant can never have 100% load factor?	3	Nuclear power plant	Hydro electric plant	Peak load Plant	Base load Plant
237	For certain industrial applications the energy requirement is 500 kWh. If the heat losses are 20 percent the total energy to be made available will be	4	3000 kWh	4000 kWh	5000 kWh	6000 k Wh

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
238	A consumer finds that after running 10kVA equipment on full load six hours his energy consumption was 48kW. It can be concluded that	4	The load factor of the consumer for the day was unity	The maximum demand of the consumer was 10 kW	The equipment was drawing reactive power only	Power factor of the equipment was 0.8
239	Which equipment provides fluctuating load?	3	Lathe machine	Exhaust fan	Welding transformer	All of the above
240	The ratio, maximum demand of the installation / sum of the individual maximum demands is known as	3	Demand Factor	Plant use Factor	Diversity Factor	Plant Capacity Factor
241	In a power plant a reserve generating capacity which is in operation but not in services known as	1	Hot reserve	Cold reserve	Spinning reserve	Firm power
242	5 consumers have peak demands of A,B,C,D and E have individual load factors of 0.5. It can be concluded that	3	Their combined load factor will be 0.5	Their peak demand during the day will be (A + B + C + D + E)	Their combined load power consumption in a day will be $12 (A + B + C + D + E)$	Their average demands are equal
243	The power station has annual load factor of 50% and capacity factor of 44%. If the maximum demand is 15 MW, the reserve capacity of the plant is	3	1250 kW	2500 kW	3750 kW	4750 kW
244	In a 440 V system, in order to obtain the minimum cost and maximum benefits, the capacitor should be installed	1	At the load	Near the transformer	Any where in the circuit	Near the earthing point
245	Which two factors are of importance for peak load plant? The following factors are associated with power plant operation I) High Efficiency II) High availability III) Quick starting IV) Low capital cost	4	I & III only	II & III only	I & IV only	III & IV only
246	Which two factors are of significant importance for base load plant? The following factors are associated with power plant operation I) High Efficiency II) High availability III) Quick starting IV) Low capital cost	1	I & II only	III & IV only	II & III only	I & IV only
247	Which is least important for base load plants? The following factors are associated with power plant operation I) High Efficiency II) High availability III) Quick starting IV) Low capital cost	3	I	II	III	IV
248	The annual peak load on 30 MW power station is 25 MW. The power station supplies loads having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. The average load is	2	1025 kW	1125 kW	1425 kW	1625 kW
249	The annual peak load on 30 MW power station is 25 MW. The power station supplies loads having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. Total energy supplied in a year is	1	9,875,000 kWh	8345,000 kWh	7450,000 kWh	6395,000 kWh

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
250	The annual peak load on 30 MW power station is 25 MW. The power station supplies loads having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. Diversity factor is	3	3.8	1.02	1.12	1.22
251	The annual peak load on 30 MW power station is 25 MW. The power station supplies loads having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. Demand factor is	2	0.75	0.83	0.89	0.45
252	Which load has the highest value of average load?	4	Load A	Load B	Load C	Load D
253	The maximum load on the station will occur at	2	0 hr	6 hr	9 hr	12 hr
254	The highest point on a load curve represents	3	Average demand	Diversion field demand	Peak demand	None of the above
255	A diesel power plant is best suited as	2	Base load plant	Stand - by plant	Peak load plant	General pupose plant
256	A gas turbine power plant usually suits for	1	Peak load operation	Base load operation	Caasual run	none of the above
257	Two tariffs are offered (P) \$.200 plus 5 cents per unit (Q) A flat rate of 30 cents per unit. From the above it can be concluded that	2	Tariff P will give lower charges upto 800 kWh	Tariff P will give lower charges for consumption more than 800 units	Tariff Q will give lower charges for consumption more than 800 kWh	Both will give identical charges beyond 1500 kWh
258	In case the height of transmission tower is increased	4	The line capacitance and inductance will not change	The line capacitance will decrease but line inductance will decrease	The line capacitance will decrease but line inductance will increase	The line capacitance will decrease but line inductance will remain unaltered
259	Two steam turbines each of 20,000 kW capacity drive a total load of 30,000 kW. The steam rates in kilogram per hour are $TP_1 = 2000 + 10 P_1 - 0.0001 P_1^2$ $TP_2 = 2000 + 10 P_2 - 0.0001 P_2^2$	1	$TP_1 = 20,000 \text{ kW } T_{p3} = 10,000 \text{ kW}$	$TP_1 = 10,000 \text{ kW } T_{p3} = 20,000 \text{ kW}$	$TP_1 = 15,000 \text{ kW } T_{p3} = 15,000 \text{ kW}$	$TP_1 = 3,000 \text{ kW } T_{p3} = 0$
260	Which of the following is the protective device against lightning over voltages?	4	Rod gaps	Surge absorbers	Horn gaps	All of the above
261	Maximum demand tariff is generally not applied to domestic consumers because	4	They acnnot afford it	They consume less power	Their load factor is low	Their maximum demand is low
262	As the load factor approaches unity, the shape of the load duration curve will be nearly	4	L shaped	Inverted L shaped	Triangular	Rectangular
263	When maximum and average loads are equal, the load factor will be	4	0	0.01	0.5	1
264	Which of the following relation is incorrect?	4	Capacity factor = Utilization Factor x Load factor	Load factor x Maximum load = Average load	Demand factor x Connected load = Maximum demand	none of the above
265	A low utilization fator for a plant indicates	3	Plant is under maintenance	Plant is used for base load only	Plant is used for stand - by pupose only	Plant is used for peak load as well as base load
266	Isolators are used to disconnect a circuit when	4	Line is on full load	Line is energized	Circuit breaker is not open	There is no current in the line
267	Which device automatically interrupts the supply in the event of surges	4	Earthing switch	Series reactor	Isolator	Circuit breaker
268	In a substation the equipment used to limit short circuit current level is	1	Series reactor	Coupling Capacitor	Lightning switch	Isolator

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
269	Which of the following correctly presents the sequence of operations of isolator circuit breaker and earthing switch while closing a circuit	2	Ensure circuit breaker is closed - close isolator - open earthing switch	Ensure circuit breaker is open - close isolator - open earthing switch if any close circuit breaker	Ensure circuit breaker is closed - open isolator - open earthing switch if any - close circuit breaker	None of these
270	750 kV is termed as	4	Medium high voltage	High Voltage	Extra High Voltage	Ultra High Voltage
271	If the height of a transmission tower is increased, which of the following parameters is likely to change?	3	Resistance	Inductance	Capacitance	None of these
272	A string efficiency of 100% implies that	2	Shunt Capacitance is 1MF	Potential across each disc is the same	Potential across each disc is zero	One of the insulator disc is shorted
273	Which type of copper wire will have highest tensile strength?	3	Soft drawn	Medium drawn	Hard drawn	none of the above
274	The servicemains connect	1	Distributor and consumer terminals	Distributor and transformer	Distributor and relay system	Transformer and earth
275	A 66 kV system has string insulator having five discs and the earth to disc capacitance ratio of 0.10 A. The string efficiency will be	3	89%	75%	67%	55%
276	If the voltage across the units in a two unit suspension insulator is 60% and 40% respectively of the line voltage, the ratio of capacitance of the insulator to that of its capacitance to earth will be	2	0.05	0.5	0.65	0.75
277	What does a load duration curve represent	3	The variation of load during different hours of the day	Average load	The number of hours for which a particular lasts during the day	None of the above
278	What is the shape of the load curve duration	1	Rectangular shape	Triangular shape	Parabolic shape	Free hand sketch
279	Maximum and minimum loads on the load duration curve is represented on which respective side	1	Left & Right	Right & Left	Randomly	None of above
280	What is a load factor	1	The ratio of average to maximum demand	The ratio of maximum demand to average load	The product of maximum demand and average load	The ratio of average load to plant capacity
281	What is the load factor of a power plant	2	Greater than unity	Less than unity	Always more than unity	Normally more than unity
282	The load factor plays a key role in determining which among the following	2	Plant Capacity	Overall cost per unit generated	Overall demand	Both 1 & 3
283	An industrial consumer has a load pattern of 2000 kW 0.8 lag for 12 hours and 1000 kW unity power factor for 12 hours. What is the load factor	4	0.5	0.55	0.6	0.75
284	What is the plant capacitor factor	3	A ratio of kWh generated to the product of plant capacity and the number of hours for which the plant is in operation	The ratio of the sum of individual maximum demands to the maximum demand on power stations	The ratio of actual energy produced to the maximum possible energy.	The ratio of maximum demand on the power station to the connected load
285	Capacity factor will be very low when the power plant	3	Is operated as base load plant	Is operated for supplying base load as well as the peak loads	Is operated in emergency only	Is under maintenance
286	A thermal generating station has a installed capacity of 15 MW and supplies a daily load of 10 Mw for 12 hours and 5 MW for remaining 12 hours. The plant capacity factor for this station is	4	1	0.75	0.67	0.5

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Question No.	Question	Correct Op.No.	Option 1	Option 2	Option 3	Option 4
287	In a power station, the cost of generation of power reduces most efficiently when	2	Diversity factor alone increases	Both diversity factor and load factor increases	Only load factor increases	Both diversity factor and load factor decreases
288	What is the result of the product of diversity factor and maximum demand	2	Average demand	Sum of consumers maximum demand	insalled capacity	Generated power
289	What is demand factor	2	Average load to maximum demand	maximum demand to connected load	Connected load to maximum demand	maximum demand to average load
290	What is the value of demand factor	2	Greater than unity	Less than unity	Always more than unity	Normally more than unity
291	What is connected load	1	Installed electrical load in the premises of the consumer	Maximum load a consumer draws	Load drawn by a consumer at any instant	none of the above
292	The power system experiences peak demand from	4	Midnight to 8 A.M	8 A.M - 2 P.M	2 P.M - 6 P.M	6 P.M - 10 P.M
293	The maximum demand on power system is 100 MW. If the annual load factor is 40%, calculate the total energy generated in a year.	3	3761 * 105 kWh	4174 * 105 kWh	3504 * 105 kWh	3500 * 105 kWh
294	A generating station has a connected load of 55 MW and maximum demand of 20 MW. What is the demand factor	2	0.4785	0.3636	2.75	1100
295	Determine the average demand of a plant if its load factor and maximum demand are 0.60 and 30 MW	2	20 MW	18 MW	50 MW	13 MW
296	To determine the polarity of the voltage drop across resistor, it is necessary to know	2	Value of current through resistor	Direction of current through the resistor	Value of resistor	E.M.F's in the circuit
297	Which method can be used for absolute measurement of resistance?	2	Ohm's Law method	Wheatstone's bridge method	Releigh method	Lorentz method
298	A network contains linear resistors and ideal voltage sources. If values of all resistors are doubled then voltage across each resistor is	2	Halved	Doubled	Increases by four times	Not changed
299	Which of the following is not a step in solving for total resistance in a series - parallel circuit?	3	Determine the equivalent resistance of all series connected resistor	Determine the equivalent resistance of all parallel connected combinations	Determine the equivalent resistance of all series and parallel connected combinations	Determine the equivalent resistance of remaining series connected resistor
300	If two points are directly connected by using good conducting wire then it represents	3	Open circuit	Network	Short circuit	none of the above