

<u>Itemcode</u> : <b>EP1001</b>	
<b>Q1:</b> Two loads A and B each of 100 KVA are connected to a utility grid. The power factor of load 'A' is 0.6 lagging while the power factor of 'B' is 0.8 lagging. The power factor of utility grid due to two loads is:	
<b>A</b>	0.707
<b>B</b>	0.8
<b>C</b>	0.85
<b>D</b>	0.65
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1002</b>	
<b>Q2:</b> A transducer is used to measure the water level of dam. It (transducer) has a output span of 4-20 mA, and transducer measurement results in a value of 10 mA. If the accuracy of transducer is $\pm 0.5\%$ of full scale, what is the possible output current.	
<b>A</b>	9.09 – 10.01 mA
<b>B</b>	9.6 – 10.4 mA
<b>C</b>	7.65 – 12.43 ma
<b>D</b>	8.45 – 11.45 mA
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1003</b>	
<b>Q3:</b> An instrumentation amplifier exhibits;	
<b>A</b>	Low impedance between input terminals.
<b>B</b>	High impedance between input terminals.
<b>C</b>	High offset and drift.
<b>D</b>	Low common mode rejection and high effective output impedance.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1004</b>	
<b>Q4:</b> When a magnetic field is applied at right angle to the direction of electric current, an electric field is set up which is perpendicular to both direction of electric current and applied magnetic field. This is known as :	
<b>A</b>	Josephson effect
<b>B</b>	Faraday law of induction
<b>C</b>	Hall effect
<b>D</b>	Gauss's law
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1005</b>	
<b>Q5:</b> A non-conventional source generates 414V, 3 phase, 4-wire. It is connected to single phase load of $(99.7\sqrt{3})$ ohms.. The resistance of each line is 0.1 ohm and that of neutral 0.2 ohm. The current in the neutral wire is:	

<b>A</b>	Zero.
<b>B</b>	78.600
<b>C</b>	2.745
<b>D</b>	1.38
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1006</b>	
<b>Q6:</b> The alternative magnetic flux in a conductor caused by the current flowing in a neighbouring conductor gives rise to a circulating current. This causes an apparent increase in resistance of a conductor. This phenomenon is called:	
<b>A</b>	Skin effect
<b>B</b>	Ferranti effect
<b>C</b>	Proximity effect
<b>D</b>	Corona
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1007</b>	
<b>Q7:</b> The auto reclosing circuit breaker is used to increase:	
<b>A</b>	The operating time of circuit breaker.
<b>B</b>	The phase difference in phase comparison protection scheme
<b>C</b>	Transient stability limit
<b>D</b>	The operating time of the relay.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1008</b>	
<b>Q8:</b> The secondary winding of CT is never be kept open, when the primary winding of CT is excited, because this results:	
<b>A</b>	the primary current of CT winding increases to very high.
<b>B</b>	Flux density in the core causes magnetic saturation.
<b>C</b>	Secondary winding voltage collapes to zero.
<b>D</b>	A large ratio error in CT.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1009</b>	
<b>Q9:</b> A line integral can be converted to surface integral by:	
<b>A</b>	Ampere's circuital law
<b>B</b>	Lenz law
<b>C</b>	Stoke theorem
<b>D</b>	Biot- Savart law
Correct Ans: <b>C</b>	

Itemcode : **EP1010**

**Q10:** A high frequency lossless line has the inductance of line,  $L = 1.2 \text{ mH/ Km}$  and capacitance,  $C = 0.05\mu\text{F/ Km}$ . The characteristic impedance of line is:

- A** zero
- B** Infinity
- C** 600 Ohms
- D** 155 ohms

Correct Ans: **D**

Itemcode : **EP1011**

**Q11:** In magnetic field theory, the Ohm law in point form can be expressed as:

- A**  $V = R.I$
- B**  $\vec{J} = \vec{E} / \sigma$
- C**  $\vec{J} = \sigma . \vec{E}$
- D**  $R = \rho l / A$

Correct Ans: **C**

Itemcode : **EP1012**

**Q12:** A synchronous motor is floating on infinity main at no load. Its excitation is now increased. It will draw:

- A** Unity power factor current.
- B** Zero power factor leading current.
- C** Zero power factor lagging current.
- D** No current.

Correct Ans: **B**

Itemcode : **EP1013**

**Q13:** A synchronous generator is rated 10 MVA, 11kV, 0.85 pf, 50Hz. The prime mover power rating shall be:

- A** 10 MVA
- B** 10 MW
- C** 8.5 MVA
- D** 8.5 MW

Correct Ans: **D**

Itemcode : **EP1014**

**Q14:** The power input to an induction motor is 47.5 kW when it is running at 4% slip. The stator resistance and core loss are assumed negligible. The synchronous watt is:

- A** 42.1 kW
- B** 53.5 kW

<b>C</b>	45.5 kW
<b>D</b>	47.5 kW
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1015</b>	
<b>Q15:</b> A flow meter that measures flow rates which are independent of density is:	
<b>A</b>	Rotameter
<b>B</b>	Electromagnetic flow meter
<b>C</b>	Venturimeter
<b>D</b>	Orifice meter
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1016</b>	
<b>Q16:</b> Memory refreshing may be done by:	
<b>A</b>	CPU.
<b>B</b>	DMA controller.
<b>C</b>	Stack pointer.
<b>D</b>	External refresh controller.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1017</b>	
<b>Q17:</b> The starter in DC- motor:	
<b>A</b>	Reduce the armature reaction.
<b>B</b>	Enhance the efficiency of DC-motor.
<b>C</b>	Control the voltage regulation.
<b>D</b>	Limit the armature current to its rated current.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1018</b>	
<b>Q18:</b> A three phase, 440V, 50hp, 50Hz, induction motor delivers rated output power at 1440 rpm. Its slip rpm is:	
<b>A</b>	1500 rpm.
<b>B</b>	1440 rpm.
<b>C</b>	52.5 rpm.
<b>D</b>	60.0 rpm.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1019</b>	
<b>Q19:</b> Plugging in DC motors require:	
<b>A</b>	Modulating dc with ac supply.

<b>B</b>	Reverse the connections of the field while the connections of the armature are kept the same.
<b>C</b>	Reverse the connections of the armature and the field.
<b>D</b>	Reverse the connections of the armature while the connections of the field are kept the same.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1020</b>	
<b>Q20:</b> In LED, light is emitted when it is forward biased and :	
<b>A</b>	And magnetic field is applied.
<b>B</b>	Free holes acquire the fermi-level energy.
<b>C</b>	Free Electrons in the conduction band recombine with holes in the valency band .
<b>D</b>	Electrons in outer orbit acquire lower fermi-level energy.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1021</b>	
<b>Q21:</b> In OC and SC test of a transformer, the wattmeter will be connected of:	
<b>A</b>	Low power factor for OC and SC test.
<b>B</b>	Low power factor for OC and unity power factor for SC.
<b>C</b>	Unity power factor for OC and SC test.
<b>D</b>	Unity power factor for OC and low power factor for SC.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1022</b>	
<b>Q22:</b> A current source of 5.0 amp, having internal resistance of 10 ohm, is connected to a resistance , R= 5 ohm. The current in the resistance is:	
<b>A</b>	5 A
<b>B</b>	1.5 A
<b>C</b>	3.33 A
<b>D</b>	1.00 A
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1023</b>	
<b>Q23:</b> The ratio of RMS value of sinusoidal wave to RMS value of full wave rectified sinusoidal wave voltage is :	
<b>A</b>	1.414
<b>B</b>	0.707
<b>C</b>	1.00
<b>D</b>	1.321
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1024</b>	
<b>Q24:</b> The voltage magnification,'Q' at resonance is given by:	

<b>A</b>	$Q = \text{Resonance frequency} / \text{Average power at resonance.}$
<b>B</b>	$Q = \text{Band width} / \text{Average power at resonance.}$
<b>C</b>	$Q = \text{Reactive power at resonance frequency} / \text{Average power at resonance.}$
<b>D</b>	$Q = \text{Average power at resonance} / \text{Reactive power at resonance.}$
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1025</b>	
<b>Q25:</b> A rectangular core has an air gap cut across one of its limbs. Assuming the reluctance of air gap is $1 \times 10^6$ AT/Wb and that of core is infinite. The mmf required to set up an air gap flux of 2 mWb is:	
<b>A</b>	$2 \times 10^{-3} \text{AT}$
<b>B</b>	$2 \times 10^1 \text{AT}$
<b>C</b>	$2 \times 10^2 \text{AT}$
<b>D</b>	$2 \times 10^3 \text{AT}$
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1026</b>	
<b>Q26:</b> The maximum efficiency in a transformer occur when:	
<b>A</b>	Core loss is equal to copper loss and power factor is 0.85.
<b>B</b>	Core loss is equal to copper loss and power factor is 0.90.
<b>C</b>	Core loss is equal to copper loss and power factor is 0.95.
<b>D</b>	Core loss is equal to copper loss and power factor is unity.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1027</b>	
<b>Q27:</b> A 100 MVA, 33kV, generator is connected to the motors load through a transmission line and transformers. The 3-phase transformer is rated 100MVA, 33kV $\Delta$ / 11KV Y with leakage reactance 8%. The per unit impedance of transformer referred to primary side is 0.0684, then the per unit impedance referred to secondary side is:	
<b>A</b>	0.0228
<b>B</b>	0.0468
<b>C</b>	0.0684
<b>D</b>	0.2224
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1028</b>	
<b>Q28:</b> The voltage and frequency of electric railway transmission line is:	
<b>A</b>	440V, 50 Hz.
<b>B</b>	25kV, 10 kHz
<b>C</b>	25 kV, 1kHz
<b>D</b>	25 kV, 50Hz

Correct Ans: **D**

Itemcode : **EP1029**

**Q29:** For a pulse transformer, the material used for its core and possible turn ratio from primary to secondary are, respectively:

- |          |                      |
|----------|----------------------|
| <b>A</b> | Ferrite; 20:1        |
| <b>B</b> | Laminated iron; 1: 1 |
| <b>C</b> | Ferrite; 1: 1        |
| <b>D</b> | Powder iron; 1: 1    |

Correct Ans: **C**

Itemcode : **EP1030**

**Q30:** In an UJT, with  $V_{BB}$  as the voltage across base terminals, the emitter potential at peak point is given by:

- |          |                     |
|----------|---------------------|
| <b>A</b> | $\eta V_{BB}$       |
| <b>B</b> | $\eta V_D$          |
| <b>C</b> | $\eta V_{BB} + V_D$ |
| <b>D</b> | $\eta V_D + V_{BB}$ |

Correct Ans: **C**

Itemcode : **EP1031**

**Q31:** In a 3-phase full converter, the output voltage pulsates at a frequency equal to:

- |          |                       |
|----------|-----------------------|
| <b>A</b> | supply frequency, $f$ |
| <b>B</b> | $2 f$                 |
| <b>C</b> | $3 f$                 |
| <b>D</b> | $6 f$                 |

Correct Ans: **D**

Itemcode : **EP1032**

**Q32:** A dc battery is charged from a constant dc source of 200 V through a chopper. The dc battery is to be charged from its internal emf of 90V to 120V. The battery has internal resistance of 10 ohm. For a constant charging current of 10A, the range of duty cycle is:

- |          |             |
|----------|-------------|
| <b>A</b> | 0.5 to 0.65 |
| <b>B</b> | 0.6 to 0.70 |
| <b>C</b> | 0.7 to 0.8  |
| <b>D</b> | 0.8 to 0.9  |

Correct Ans: **A**

Itemcode : **EP1033**

**Q33:** In Current source inverter (CSI), if frequency of output voltage is ' $f$ ' Hz, then the frequency of voltage input to CSI is:

- |          |       |
|----------|-------|
| <b>A</b> | $f/2$ |
|----------|-------|

<b>B</b>	f
<b>C</b>	2f
<b>D</b>	3f
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1034</b>	
<b>Q34:</b> A power system is subjected to a fault which makes the zero sequence component of current equal to zero. The nature of fault is:	
<b>A</b>	Single line to ground fault
<b>B</b>	Double line to ground fault
<b>C</b>	Three phase to ground fault
<b>D</b>	Double line to fault
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1035</b>	
<b>Q35:</b> The incremental cost characteristic of the two units in a plant are given by:	
$IC_1 = \text{Rs.}(0.1P_1 + 8.0)$ per MWh , and $IC_2 = \text{Rs.}(0.15P_2 + 3.0)$ per MWh	
The optimum sharing of load when the total load is 100 MW is:	
<b>A</b>	$P_1 = 60$ MW and $P_2 = 40$ MW
<b>B</b>	$P_1 = 33.3$ MW and $P_2 = 66.7$ MW
<b>C</b>	$P_1 = 40$ MW and $P_2 = 60$ MW
<b>D</b>	$P_1 = 66.7$ MW and $P_2 = 33.3$ MW
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1036</b>	
<b>Q36:</b> In the SF6 circuit breaker:	
<b>A</b>	The breaker performance is affected due to the atmospheric conditions.
<b>B</b>	The arcing time is increased.
<b>C</b>	The current chopping tendency is minimized by using the gas at high pressure and high velocity.
<b>D</b>	Electrical clearances are drastically reduced.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1037</b>	
<b>Q37:</b> The load flow problem solution using Newton Raphson method, for an' N'-bus system , the number of unknowns are:	
<b>A</b>	N-1
<b>B</b>	2N
<b>C</b>	2N-1
<b>D</b>	



2(N-1)

Correct Ans: **D**

Itemcode : **EP1038**

**Q38:** The function of chimney in coal based plant is to:

- A** Creat positive pressure forced draught.
- B** Economise the heat recovery from fuel gases.
- C** Enable the boiler to maintain high pressure and temperature.
- D** Dispose of hazardous smoke and gases high up in the atmosphere.

Correct Ans: **D**

Itemcode : **EP1039**

**Q39:** Francis turbine is used :

- A** At low water head when speed should remain constant.
- B** When the total available head is used, partially in the form of pressure energy and partially in the form of kinetic energy.
- C** whole of the available pressure energy of water is 1st converted into kinetic energy.
- D** When the flow of water is fully axial.

Correct Ans: **B**

Itemcode : **EP1040**

**Q40:** Induction heating of non-matallic material's such as wood, glass, etc. are due to:

- A** Hystersis loss.
- B** Dielectric loss.
- C** Thermal conduction.
- D** Copper loss.

Correct Ans: **B**

Itemcode : **EP1041**

**Q41:** An electronic choke is connected in tube light circuit. Which of the following statement is correct?

- A** The starter in tube light circuit is needed for the ignition of tube light.
- B** The frequency of output voltage of electronic choke is 50 Hz.
- C** The starter in the tube light circuit is not required.
- D** The output voltage of electronic choke is 220 V, 1kHz.

Correct Ans: **C**

Itemcode : **EP1042**

**Q42:** The conversion of Hexadecimal number 'BC' to Binary number is:

- A** 10111100
- B** 10101011

<b>C</b>	11001011
<b>D</b>	10111010
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1043</b>	
<b>Q43:</b> when the underground cable is excited with high voltage, the maximum stress occur at:	
<b>A</b>	Conductor.
<b>B</b>	Lead sheath.
<b>C</b>	Armouring.
<b>D</b>	Metallic paper screen
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1044</b>	
<b>Q44:</b> In interconnected two area system:	
<b>A</b>	The use of integral control for steady state error in frequency cannot be reduced to zero.
<b>B</b>	The use of integral control for steady state error in tie-line power cannot be reduced to zero.
<b>C</b>	The use of integral control control for steady state errors in frequency and tie line power reduce to zero.
<b>D</b>	The overall response of interconnected system for a load change in one area mainly depends on the parameters of controller of other area.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1045</b>	
<b>Q45:</b> The time stamping to data captured using phase measurement unit of power system is carried out by:	
<b>A</b>	Communication module.
<b>B</b>	GPS system.
<b>C</b>	ADC module.
<b>D</b>	MODEM.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1046</b>	
<b>Q46:</b> Mason's theorem is applicable for:	
<b>A</b>	Non- linear and linear system.
<b>B</b>	Linear time varient system.
<b>C</b>	Non-linear and linear system when initial conditions are considered.
<b>D</b>	Linear time-invariant systems.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1047</b>	
<b>Q47:</b> A system is said to be controllable and observerable if:	
<b>A</b>	

	Output is measurable and controlled by input.
<b>B</b>	Input and output are measurable.
<b>C</b>	If any one state of the system is completely controllable and observable.
<b>D</b>	If all the states of the system are completely controllable and observable.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1048</b>	
<b>Q48:</b> The characteristic equation of a control system is given by $S^4 + 6S^2 + 8 = 0$ . The number of roots lie on the imaginary axis of S-plane is:	
<b>A</b>	1
<b>B</b>	2
<b>C</b>	3
<b>D</b>	4
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1049</b>	
<b>Q49:</b> Which one of the following statements is correct for gain margin and phase margin of two closed loop systems having loop functions $G(S) H(S)$ and $e^{-x} \cdot G(S) H(S)$ :	
<b>A</b>	Both gain margin and phase margin of the two systems will be identical.
<b>B</b>	Both Gain margin and phase margin of $G(S) H(S)$ will be more to $e^{-x} \cdot G(S) H(S)$ .
<b>C</b>	Gain margins of the two systems are same but phase margin of $G(S) H(S)$ will be more to $e^{-x} \cdot G(S) H(S)$ .
<b>D</b>	Phase margin of the two systems are same but gain margin of $G(S) H(S)$ will be less to $e^{-x} \cdot G(S) H(S)$ .
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1050</b>	
<b>Q50:</b> The phase lead compensator is used to:	
<b>A</b>	Increase rise time and decrease overshoot.
<b>B</b>	Decrease both rise time and overshoot.
<b>C</b>	Increase both rise time and overshoot.
<b>D</b>	Decrease rise time and increase overshoot.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1051</b>	
<b>Q51:</b> The arrangement whereby several central processing units share one memory, is called:	
<b>A</b>	Multitasking
<b>B</b>	Multiprogramming
<b>C</b>	Multiprocessing
<b>D</b>	Concurrent programming

Correct Ans: **C**

Itemcode : **EP1052**

**Q52:** In microprocessor, Stack pointer is a register which comes into use whenever:

- A** A data is written into the memory.
- B** A data is read from the memory.
- C** An interrupt or high priority call comes from external devices.
- D** The output variable is sent out of the CPU.

Correct Ans: **C**

Itemcode : **EP1053**

**Q53:** In microprocessor architecture, flag indicates the:

- A** Bit -size of microprocessor.
- B** Internal status of CPU.
- C** A halt state of CPU..
- D** Time for which the output data remain valid output when the device is no longer selected.

Correct Ans: **B**

Itemcode : **EP1054**

**Q54:** In semiconductor strain gauges, when tensile strain is applied:

- A** Resistance increases in N-type materials.
- B** Resistance increases in P-type materials.
- C** Resistance increases in both P and N-type materials.
- D** Resistance decreases in both P and N-type materials.

Correct Ans: **B**

Itemcode : **EP1055**

**Q55:** Three types of temperature transducers are compared as regards of their sensitivity. The order in which exhibit their sensitivities (higher to lowest is):

- A** Thermistors, RTDs, Thermocouples.
- B** Thermocouples, RTDs, Thermistors.
- C** RTDs, Thermistors, Thermocouples.
- D** RTDs, Thermocouples, Thermistors.

Correct Ans: **A**

Itemcode : **EP1056**

**Q56:** An astable multivibrator circuit gives:

- A** One output pulse for every two input pulses.
- B** A timed output pulse for a trigger input.

<b>C</b>	A train of output pulses for a trigger input.
<b>D</b>	Four output pulses for a single input pulse.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1057</b>	
<b>Q57:</b> A rectifier type electronic voltmeter employs negative feedback to:	
<b>A</b>	Increase the overall gain of voltmeter.
<b>B</b>	Improve stability of voltmeter circuit.
<b>C</b>	Overcome non-linearity of diodes.
<b>D</b>	Overcome variations in input voltage.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1058</b>	
<b>Q58:</b> Wagner earthing device used in the A.C. bridge removes:	
<b>A</b>	Eddy current errors
<b>B</b>	Residual error.
<b>C</b>	Conductance effects.
<b>D</b>	All the earth capacitances from bridge.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1059</b>	
<b>Q59:</b> When a potentiometer is used for the measurement of voltage of unknown source, it basically function as a:	
<b>A</b>	Feed forward type instrument , deflection as well as null type instrument.
<b>B</b>	Feed back type instrument, deflection as well as null type instrument.
<b>C</b>	Deflection as well as null type instrument.
<b>D</b>	Null type instrument.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1060</b>	
<b>Q60:</b> Irradiation energy of sun can be directly used to produce electrical energy by:	
<b>A</b>	Fuel cell
<b>B</b>	Plasma at high temperature.
<b>C</b>	Photo-voltaic cell.
<b>D</b>	MHD generators .
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1061</b>	
<b>Q61:</b> Broad-band frequency over power line can be obtained by using following modulation:	
<b>A</b>	Amplitude modulation (AM).

<b>B</b>	Frequency modulation (FM).
<b>C</b>	Phase modulation.
<b>D</b>	Orthogonal frequency division multiplexing (OFDM)
Correct Ans: <b>D</b>	

Itemcode : <b>EP1062</b>	
<b>Q62:</b> In computer to computer communication, ISO standard model is used at regional load despatch centers. This ISO model is made of:	
<b>A</b>	7- layers.
<b>B</b>	5-layers.
<b>C</b>	3 layers.
<b>D</b>	Single layer i.e. called physical layer.
Correct Ans: <b>D</b>	

Itemcode : <b>EP1063</b>	
<b>Q63:</b> The decimal value of 0.25 is equivalent to:	
<b>A</b>	Binary value 0.1.
<b>B</b>	Binary value 0.01.
<b>C</b>	Binary value .0.011.
<b>D</b>	Binary value 0.001.
Correct Ans: <b>B</b>	

Itemcode : <b>EP1064</b>	
<b>Q64:</b> In BLDC motor:	
<b>A</b>	Torque is directly proportional to speed.
<b>B</b>	Torque is independent to speed.
<b>C</b>	Torque will reduce as the speed increases.
<b>D</b>	Magnetic field strength increases with increase of speed.
Correct Ans: <b>C</b>	

Itemcode : <b>EP1065</b>	
<b>Q65:</b> In non-inverting mode amplifier, constructed from an operational amplifier:	
<b>A</b>	Attenuation of input signal can be achieved easily.
<b>B</b>	Attenuation of input signal can not be achieved .
<b>C</b>	Input impedance is quite low.
<b>D</b>	The voltage difference between input terminals is about unity voltage.
Correct Ans: <b>B</b>	

Itemcode : <b>EP1066</b>	
<b>Q66:</b> In single pulse modulation of PWM, third harmonic can be eliminated if pulse width is equal to:	

<b>A</b>	30°C
<b>B</b>	60°C
<b>C</b>	120°C
<b>D</b>	150°C
Correct Ans: <b>C</b>	

Itemcode : <b>EP1067</b>	
<b>Q67:</b> The power transferred to the load when resistance is equal to thevenin resistace is called:	
<b>A</b>	Thevenin theorem.
<b>B</b>	Norton theorem.
<b>C</b>	Maximum power transfer theorem.
<b>D</b>	Superposition theorem.
Correct Ans: <b>C</b>	

Itemcode : <b>EP1068</b>	
<b>Q68:</b> The stored energy of a capacitor is dependent upon its:	
<b>A</b>	Instantaneous voltage only.
<b>B</b>	Instantaneous current only.
<b>C</b>	Instantaneous voltage and history of current.
<b>D</b>	Instantaneous current and history of voltage.
Correct Ans: <b>A</b>	

Itemcode : <b>EP1069</b>	
<b>Q69:</b> A single-phase transformer is rated 600/ 200V, 25kVA, 50Hz. If the 600V side is excited at 600V, 40Hz, then :	
<b>A</b>	Maximum value of flux built in the transformer decreases.
<b>B</b>	Core loss would increase.
<b>C</b>	The secondary side voltage of transformer decreases.
<b>D</b>	Hystersis loss and core loss decreases.
Correct Ans: <b>B</b>	

Itemcode : <b>EP1070</b>	
<b>Q70:</b> A three phase, 50Hz induction motor runs at 965rpm at full load. The speed of stator field with reference to rotor field is:	
<b>A</b>	1000rpm
<b>B</b>	35rpm
<b>C</b>	0.35rpm.
<b>D</b>	zero rpm.
Correct Ans: <b>D</b>	

Itemcode : **EP1071**

**Q71:** Congestion of power transfer can be managed with:

- A** FACTS devices.
- B** Tap changer transformer.
- C** Enhancing generators capacity
- D** SCADA system.

Correct Ans: **A**

Itemcode : **EP1072**

**Q72:** GPIB system is an interface complying to IEEE 488 standard:

- A** It has 20 data transfer lines.
- B** It has 5 data transfer control lines.
- C** It has 3 general management lines.
- D** It has 8 data transfer lines bus.

Correct Ans: **D**

Itemcode : **EP1073**

**Q73:** An IDMT type overcurrent relay is used to protect a feeder through av 500 / 1 amp CT. The relay has a plug setting of 125% and time multiplier setting (TMS) is equal to 0.3. If the fault current is 5000 A flow through the feeder, the pick up current of relay is:

- A** 4000 A
- B** 10 A
- C** 1.25 A
- D** 1.00 A

Correct Ans: **C**

Itemcode : **EP1074**

**Q74:** Air blast circuit breaker (ABCB) possesses the feature that:

- A** There is no possibility of current chopping and restriking.
- B** high speed reclosure is not possible.
- C** Fire hazard cannot be eliminated.
- D** Suitable for reliable, frequent and high speed operation.

Correct Ans: **D**

Itemcode : **EP1075**

**Q75:** The probable error,  $e_p$  for the gaussian distribution function is given by:

- A**  $e_p = \text{standard deviation, } \sigma$
- B**  $e_p = \text{variance}$
- C**  $e_p = 3 \sigma$



<b>D</b>	$e_p = 0.6745 \sigma$
Correct Ans: <b>D</b>	

Itemcode : <b>EP1076</b>	
<b>Q76:</b> The no load voltage of an alternator for leading power factor of load is given by:	
<b>A</b>	$E_0 = \text{Sqrt} [ ( V \cos \varphi + I R_a )^2 + ( V \sin \varphi + I X_s )^2 ]$
<b>B</b>	$E_0 = \text{Sqrt} [ ( V \cos \varphi + I R_a )^2 + ( V \sin \varphi - I X_s )^2 ]$
<b>C</b>	$E_0 = \text{Sqrt} [ ( V \cos \varphi + I R_a )^2 + ( I X_s )^2 ]$
<b>D</b>	$E_0 = \text{Sqrt} [ ( V \cos \varphi - I R_a )^2 + ( V \sin \varphi + I X_s )^2 ]$
Correct Ans: <b>B</b>	

Itemcode : <b>EP1077</b>	
<b>Q77:</b> In three pin socket, the diameter of earth pin is larger to other two pins , because:	
<b>A</b>	Voltage at this pin rises during short circuit.
<b>B</b>	Current reduces to zero abruptly.
<b>C</b>	High impedance is provided through this pin to current path compared to other pins.
<b>D</b>	Low impedance is provided through this pin to current path compared to other pins.
Correct Ans: <b>D</b>	

Itemcode : <b>EP1078</b>	
<b>Q78:</b> A logic gate is an electronic circuit which	
<b>A</b>	Operates on binary algebra.
<b>B</b>	Perform arithmetic and logic functions
<b>C</b>	Invert an input signal
<b>D</b>	Attenuate noise, drift, and other unwanted disturbance.
Correct Ans: <b>B</b>	

Itemcode : <b>EP1079</b>	
<b>Q79:</b> The polarization (P) of a dielectric occurs when:	
<b>A</b>	External electric field is applied
<b>B</b>	External magnetic field is applied
<b>C</b>	External reactive power is applied
<b>D</b>	External real power is applied
Correct Ans: <b>A</b>	

Itemcode : <b>EP1080</b>	
<b>Q80:</b> A ac servo motor is	

<b>A</b>	Single phase induction.
<b>B</b>	Two phase induction motor.
<b>C</b>	Three phase induction motor.
<b>D</b>	Three phase synchronous motor.
Correct Ans: <b>B</b>	

Itemcode : **EP1081**

**Q81:** Which of the following is correct about the total area of "Old Himachal Pradesh" in comparison to "New Himachal" in the Census of 1991?

- (i) It was 5% higher than the "New Himachal Pradesh".
- (ii) It was less than the "New Himachal", area.
- (iii) It was 2% higher than the "New Himachal", area.

<b>A</b>	(i) only.
<b>B</b>	(ii) only.
<b>C</b>	(i) & (iii).
<b>D</b>	(ii) & (iii).
Correct Ans: <b>B</b>	

Itemcode : **EP1082**

**Q82:** Which of the following princely State was merged with Himachal Pradesh without making any change in its boundaries?

<b>A</b>	Chamba.
<b>B</b>	Rampur Bushahr.
<b>C</b>	Jubbal.
<b>D</b>	Balson.
Correct Ans: <b>A</b>	

Itemcode : **EP1083**

**Q83:** Which of the following is correct about the percentage of Scheduled Caste population in Himachal Pradesh according to the Census of 2011?

- (i) It is about 10% of State's population.
- (ii) It is about 15% of State's population.
- (iii) It is about 25% of State's population.

<b>A</b>	(i).
<b>B</b>	(ii).
<b>C</b>	(iii).
<b>D</b>	(i) & (ii).
Correct Ans: <b>C</b>	

Itemcode : **EP1084**

**Q84:** Find out the correct match of the following Tribes with their forms of marriages in H.P. :

<u>Tribe</u>	<u>Form of Marriage</u>
(i) The Gaddis	(a) Doghri.
(ii) The Swanglas	(b) Jhanjrara.
(iii) The Pangwals	(c) Janekang.
(iv) The Kinnauras or Kinners	(d) Chheti.

**A** (i) – (b); (ii) – (d); (iii) – (a); (iv) – (c).

**B** (ii) – (c); (iii) – (a); (i) – (b); (iv) – (d).

**C** (iii) – (d); (iv) – (c); (i) – (a); (ii) – (b).

**D** (iv) – (a); (i) – (b); (ii) – (c); (iii) – (d).

Correct Ans: **A**

Itemcode : **EP1085**

**Q85:** Identify the pair of two districts of Himachal Pradesh which are at the bottom of all the districts, in female literacy in Census - 2011 correctly :

**A** Mandi & Kullu.

**B** Kinnaur & Sirmaur.

**C** Chamba & Kinnaur.

**D** Lahaul-Spiti & Chamba.

Correct Ans: **D**

Itemcode : **EP1086**

**Q86:** Which of the following is correct about the Rashtriya Uchchar Shiksha Abhiyan?

(i) It was implemented by Himachal Pradesh in the year 2013-14.

(ii) The scheme was under the 12th Five-Year Plan.

(iii) It was implemented by Himachal Pradesh in 2015-16.

**A** (iii) & (ii).

**B** (ii) & (i).

**C** (i) & (iii)

**D** (iii) only.

Correct Ans: **B**

Itemcode : **EP1087**

**Q87:** Which of the following is true about the Projections for 2022, made in the Economic Survey of Himachal, 2020-21 for the production of Electricity from the waste material of the cities?

**A** 10 MW.

<b>B</b>	07 MW.
<b>C</b>	03 MW.
<b>D</b>	05 MW.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1088</b>	
<b>Q88:</b> Which of the following is correct about the Kullu Dushehra in H.P.?	
<b>A</b>	Its procession starts only after the arrival of the Mahasu devata.
<b>B</b>	The procession starts only after the arrival of the Raghunath devata.
<b>C</b>	The procession starts only after the arrival of the Hindimba deity.
<b>D</b>	The procession starts only after the arrival of the Bhutanath devata.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1089</b>	
<b>Q89:</b> Which of the following is correct about the performance of Himachal Pradesh in the 3rd edition of the Khelo India Youth Games (2020)?	
(i) Himachal won three gold medals.	
(ii) Himachal won three silver medals.	
(iii) Himachal won five bronze medals.	
<b>A</b>	(i) only.
<b>B</b>	(ii) only.
<b>C</b>	(iii) only.
<b>D</b>	(i) & (ii).
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1090</b>	
<b>Q90:</b> The last meeting of the historic Boundary Commission appointed for delimitation of the boundaries of the Punjab and Bengal was held at which particular place of Shimla in 1947?	
<b>A</b>	The Rothney Castle.
<b>B</b>	The Barnes Court.
<b>C</b>	The United Services Club.
<b>D</b>	The Peterhoff.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1091</b>	
<b>Q91:</b> Which of the following is correct about the river Narmada?	
(i) The Narmada has formed the Delta.	
(ii) The Narmada has formed the Estuary.	

(iii) It originates from the State of Andhra Pradesh.	
<b>A</b>	(ii) only.
<b>B</b>	(i) only.
<b>C</b>	(i) & (ii).
<b>D</b>	(iii) & (i).
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1092</b>	
<b>Q92:</b> India realized its growth performance in the Five-Year Plan :	
<b>A</b>	Eighth Plan.
<b>B</b>	Ninth Plan.
<b>C</b>	Tenth Plan.
<b>D</b>	Eleventh Plan.
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1093</b>	
<b>Q93:</b> Which of the following is true of the Lok Adalats?	
(i) They are established for giving speedy justice to the parties in dispute.	
(ii) The first Lok Adalat was held in Nagpur in 1986.	
(iii) Besides the Chairman, it has four other members.	
<b>A</b>	(i) & (iii).
<b>B</b>	(ii) & (iii).
<b>C</b>	(i) only.
<b>D</b>	(ii) only.
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>EP1094</b>	
<b>Q94:</b> The Painting of 'Dandi March', is the work of the painter :	
<b>A</b>	Abanindranath Tagore.
<b>B</b>	M.F. Husain.
<b>C</b>	Raja Ravi Verma.
<b>D</b>	Nandlal Bose.
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1095</b>	
<b>Q95:</b> Which of the following is correct about the Swaraj Party, formed in 1923?	
(i) It was formed by C.R. Das and Motilal Nehru on January 1, 1923.	

	(ii) It was named the Congress-Khilafat Swaraj Party, better known later as the Swaraj Party.
	(iii) Motilal Nehru became its first President.
<b>A</b>	(i) & (ii).
<b>B</b>	(ii) & (iii).
<b>C</b>	(iii) & (i).
<b>D</b>	(iii) only.
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>EP1096</b>	
<b>Q96:</b> Identify from the following countries, where the Spinghar Mountains are located?	
<b>A</b>	Antarctica.
<b>B</b>	Afghanistan.
<b>C</b>	Myanmar.
<b>D</b>	Iraq.
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>EP1097</b>	
<b>Q97:</b> Which of the following is true about the convening of international conferences by the Allied Powers during the war-time or post – Second World War time?	
	(i) The Conferences include, the Yalta and the Potsdam Conferences.
	(ii) To discuss the terms of settlement for the defeated nations.
	(iii) To discuss also the problems which engulfed the world as a consequence of the War.
	(iv) The Potsdam Conference was held before the Yalta Conference.
<b>A</b>	(iv), (i) & (ii).
<b>B</b>	(iii), (iv) & (i).
<b>C</b>	(ii), (iii) & (iv).
<b>D</b>	(i), (ii) & (iii).
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>EP1098</b>	
<b>Q98:</b> Which of the following is correct about the Panama Paper Leak Scandal?	
	(i) Panama is a small country in Central America.
	(ii) There is no tax on the foreign investment there.
	(iii) Its government helps the foreigners to form a shell company in Panama, through which any person can purchase property there without disclosing the identity.
<b>A</b>	(i) & (ii).
<b>B</b>	(ii) & (iii).

<b>C</b>	(iii) & (i).
<b>D</b>	(i) only.
Correct Ans: <b>A</b>	

Itemcode : **EP1099**

**Q99:** Find out the correct match of the following authors with their books :

<u>Author</u>	<u>Book</u>
(i) Steven Leyy	(a) The Death of Jesus.
(ii) Daisy Johnson	(b) Twilight of Democracy.
(iii) Anne Applebaum	(c) Sisters.
(iv) J.M. Coetzee	(d) Facebook : The inside Story.

<b>A</b>	(i) – (c); (ii) – (b); (iii) – (d); (iv) – (a).
<b>B</b>	(i) – (b); (ii) – (a); (iii) – (c); (iv) – (d).
<b>C</b>	(i) – (d); (ii) – (c); (iii) – (b); (iv) – (a).
<b>D</b>	(i) – (a); (ii) – (d); (iii) – (c); (iv) – (b).
Correct Ans: <b>C</b>	

Itemcode : **EP1100**

**Q100:** Identify the winner Countries in the Mixed Doubles (in Tennis) category in Wimbledon – 2017 correctly from the following pair of countries ;

<b>A</b>	USA & Austria.
<b>B</b>	United Kingdom & Switzerland.
<b>C</b>	Finland & United Kingdom.
<b>D</b>	USA & France.
Correct Ans: <b>B</b>	