National Testing Agency

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Electrical Power and Energy Engineering

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Electrical Power and Energy Engineering

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Is Section Default? :	No

Question Number : 1 Question Id : 43244927353 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A \in R_{n \times n}$; det $A = 0$, then :

A. A is non singular and the rows and columns of A are linearly independent

B. A is non-singular and the rows and columns of A are linearly dependent

C. A is non-singular and A has one zero rows

D. A is singular

E. A is singular and rows and columns of A are linearly dependent

Choose the **correct** answer from the options given below :

(1) A only

(2) A and E only

(3) B and C only

(4) D only

Options :

432449107801. 1

432449107802. 2

432449107803. 3

432449107804. 4

Question Number : 2 Question Id : 43244927354 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The matrix equation $AX=0$, represents :

A. non-Homogeneous linear equations

B. Homogeneous linear equations

C. Homogeneous non-linear equations

D. non-Homogeneous non-linear equations

E. non-Homogeneous Quadratic Equation

Choose the **correct** answer from the options given below :

(1) A only

(2) B only

(3) C and D only

(4) D and E only

Options :

432449107805. 1

432449107806. 2

432449107807. 3

432449107808. 4

Question Number : 3 Question Id : 43244927355 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The greatest rate of increase of $f=xy^2z^3$ at the point $(0, -1, -2)$ is :

(1) 4

(2) 8

(3) $10\sqrt{2}$

(4) $-8i$

Options :

432449107809. 1

432449107810. 2

432449107811. 3

432449107812. 4

Question Number : 4 Question Id : 43244927356 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The derivative of $y=\int_0^{\ln x} \sin e^t \, dt$ is :

(1) 1

(2) $\frac{\sin x}{x}$

(3) $\frac{\cos x}{x}$

(4) $1-\cos e^x$

Options :

432449107813. 1

432449107814. 2

432449107815. 3

432449107816. 4

Question Number : 5 Question Id : 43244927357 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\lambda=0$, is an eigen values of A, then det (A) is :

(1) 0

(2) 1

(3) λ

(4) Infinite

Options :

432449107817. 1
432449107818. 2
432449107819. 3
432449107820. 4

Question Number : 6 Question Id : 43244927358 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If A is a null Matrix, then its rank is :

(1) 0
(2) 1
(3) 2
(4) Infinite

Options :

432449107821. 1
432449107822. 2
432449107823. 3
432449107824. 4

Question Number : 7 Question Id : 43244927359 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : If $u = xyf\left(\frac{y}{x}\right)$, then

$$x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2u$$

Reason (R) : Given function u is homogeneous of degree 2 in x and y.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**
(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**
(3) **(A)** is correct but **(R)** is not correct
(4) **(A)** is not correct but **(R)** is correct

Options :

432449107825. 1
432449107826. 2
432449107827. 3
432449107828. 4

Question Number : 8 Question Id : 43244927360 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Solving a second order Differential equation using Laplace transform :

A. Partial fraction expansion
B. Apply initial conditions in Laplace domain
C. Take Laplace transform of differential equation
D. Obtain time domain solution

Choose the **correct** answer from the options given below :

(1) A, B, C, D
(2) A, C, B, D
(3) C, B, A, D
(4) A, D, C, B

Options :

432449107829. 1
432449107830. 2
432449107831. 3

432449107832. 4

Question Number : 9 Question Id : 43244927361 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Determining Eigenvalues of a matrix :

A. Solve the characteristic equation

B. Form matrix A - λI

C. Compute determinant

D. Identify eigenvalues

Choose the **correct** answer from the options given below :

(1) A, B, C, D

(2) B, C, A, D

(3) C, A, D, B

(4) D, A, C, B

Options :

432449107833. 1

432449107834. 2

432449107835. 3

432449107836. 4

Question Number : 10 Question Id : 43244927362 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A lag network for compensation normally consists of :

A. R, L and C elements

B. R and L elements

C. R and C elements

D. R only

E. L only

Choose the **correct** answer from the options given below :

(1) C only

(2) A and E only

(3) D only

(4) B and E only

Options :

432449107837. 1

432449107838. 2

432449107839. 3

432449107840. 4

Question Number : 11 Question Id : 43244927363 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A lead compensating network :

A. Improves response time

B. Stabilizes the system with low phase margin

C. Enables moderate increase in gain without affecting stability

D. Increases the resonant frequency

E. Decreases the resonant frequency

Choose the **correct** answer from the options given below :

(1) A, B, C, E only

(2) A, B, C, D only

(3) A, B, D, E only

(4) A, C, D, E only

Options :

432449107841. 1

432449107842. 2

432449107843. 3
432449107844. 4

Question Number : 12 Question Id : 43244927364 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The response of a control system having damping factor unity will be :

(1) Oscillatory
(2) Under damped
(3) Critically damped
(4) Cannot be predicted

Options :

432449107845. 1
432449107846. 2
432449107847. 3
432449107848. 4

Question Number : 13 Question Id : 43244927365 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following controls the speed of an energy meter ?

(1) Shunt Magnet
(2) Series Magnet
(3) Shading Band
(4) Braking Magnet

Options :

432449107849. 1
432449107850. 2
432449107851. 3
432449107852. 4

Question Number : 14 Question Id : 43244927366 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Laplace transform cannot be used :

(1) For the calculation of complete response of a circuit
(2) To solve differential equations
(3) To analyze transient response directly from circuit diagram
(4) For load flow analysis in power system

Options :

432449107853. 1
432449107854. 2
432449107855. 3
432449107856. 4

Question Number : 15 Question Id : 43244927367 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following has a uniform scale ?

(1) Spring Control
(2) Gravity Control
(3) Air Damping
(4) Eddy current damping

Options :

432449107857. 1
432449107858. 2
432449107859. 3
432449107860. 4

Question Number : 16 Question Id : 43244927368 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Mass	I.	Capacitor
B.	Damper	II.	Voltage
C.	Spring	III.	Resistor
D.	Force	IV.	Inductor

Choose the **correct** answer from the options given below :

(1) A-I, B-II, C-III, D-IV

(2) A-IV, B-III, C-II, D-I

(3) A-III, B-IV, C-I, D-II

(4) A-IV, B-III, C-I, D-II

Options :

432449107861. 1

432449107862. 2

432449107863. 3

432449107864. 4

Question Number : 17 Question Id : 43244927369 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I (Plot)		**List - II (Related parameters)**
A.	Root Locus Plot	I.	Corner frequency
B.	Bode Plot	II.	Breakaway point
C.	Nyquist Plot	III.	Critical point
D.	Signal flow chart	IV.	Transmittance

Choose the **correct** answer from the options given below :

(1) A-II, B-I, C-IV, D-III

(2) A-I, B-II, C-III, D-IV

(3) A-IV, B-III, C-II, D-I

(4) A-II, B-I, C-III, D-IV

Options :

432449107865. 1

432449107866. 2

432449107867. 3

432449107868. 4

Question Number : 18 Question Id : 43244927370 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Resolution	I.	Closeness with which the instrument reading approaches the true value
B.	Sensitivity	II.	Reproductivity of measurement
C.	Accuracy	III.	Smallest change in measured value which instrument can respond
D.	Precision	IV.	Ratio of response of the instrument to the input value

Choose the **correct** answer from the options given below :

(1) A-III, B-IV, C-I, D-II

(2) A-III, B-IV, C-II, D-I

(3) A-IV, B-III, C-I, D-II

(4) A-II, B-III, C-I, D-IV

Options :

432449107869. 1

432449107870. 2

432449107871. 3
432449107872. 4

Question Number : 19 Question Id : 43244927371 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Derivative control	I.	Improved over shoot response
B.	Integral control	II.	Less steady state errors
C.	Rate feedback control	III.	Less stable
D.	Proportional control	IV.	More Damping

Choose the **correct** answer from the options given below

(1) A-I, B-II, C-III, D-IV
(2) A-IV, B-III, C-I, D-II
(3) A-II, B-III, C-I, D-IV
(4) A-I, B-II, C-IV, D-III

Options :

432449107873. 1
432449107874. 2
432449107875. 3
432449107876. 4

Question Number : 20 Question Id : 43244927372 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : A Wheatstone bridge is used for precise measurement of Resistance.

Reason (R) : It operates on the principle of null deflection.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**
(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**
(3) **(A)** is correct but **(R)** is not correct
(4) **(A)** is not correct but **(R)** is correct

Options :

432449107877. 1
432449107878. 2
432449107879. 3
432449107880. 4

Question Number : 21 Question Id : 43244927373 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For closed loop control system operation :

A. Controller generates control signal
B. Error signal is produced
C. Output is sensed by sensor
D. Reference input is compared

Choose the **correct** answer from the options given below :

(1) A, B, C, D
(2) D, B, C, A
(3) D, A, B, C
(4) D, B, A, C

Options :

432449107881. 1
432449107882. 2
432449107883. 3

432449107884. 4

Question Number : 22 Question Id : 43244927374 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The desired properties of magnetic materials used for electrical machines are :

A. Narrow hysteresis loop to give small hysteresis loss

B. Increased resistivity to give small eddy current loss

C. Free from ageing problem

D. High ductility and free from brittleness

E. High permeability and High saturation flux density

Choose the **correct** answer from the options given below :

(1) A and B only

(2) A, C and E only

(3) A, C and D only

(4) A, B, C, D, E

Options :

432449107885. 1

432449107886. 2

432449107887. 3

432449107888. 4

Question Number : 23 Question Id : 43244927375 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Higher values of ampere-conductors cannot be recommended for synchronous machines as it will cause :

A. Increase in copper loss leading to poor efficiency and temperature rise

B. Increase in synchronous reactance leading to poor inherent voltage regulation

C. Increase in stray load loss

D. Decrease in stray load loss

E. Decrease in synchronous reactance

Choose the **correct** answer from the options given below :

(1) D and E only

(2) A, B and E only

(3) A, B and C only

(4) A, D and E only

Options :

432449107889. 1

432449107890. 2

432449107891. 3

432449107892. 4

Question Number : 24 Question Id : 43244927376 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a Three phase alternator, the effect of slot harmonics can be reduced by :

A. Skewing the slots

B. Fractional slot winding

C. Short-chorded winding

D. Distributed winding

E. Increasing the number of poles

Choose the **correct** answer from the options given below :

(1) A and E only

(2) B, C and D only

(3) A and B only

(4) A, D and E only

Options :

432449107893. 1

432449107894. 2

432449107895. 3

432449107896. 4

Question Number : 25 Question Id : 43244927377 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The transfer impedances at a 2 port network remain constant when the position of excitation and response are interchanged if the network :

A. Is linear

B. Contains bilateral element

C. Has high impedance

D. In resonant

E. Is non-linear

Choose the **correct** answer from the options given below :

(1) A and B only

(2) A, B and C only

(3) A, B, C and D only

(4) A, C, D and E only

Options :

432449107897. 1

432449107898. 2

432449107899. 3

432449107900. 4

Question Number : 26 Question Id : 43244927378 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a R-L-C series circuit under resonance :

A. Current in the circuit is in phase with the applied voltage

B. Voltage drop across capacitor C and Inductior L are equal in magnitude

C. Voltage across the capacitor is equal in magnitude to the applied voltage

D. Current in the circuit is maximum

Choose the **correct** answer from the options given below :

(1) A only

(2) B, D and E only

(3) A, B and D only

(4) C, D and E only

Options :

432449107901. 1

432449107902. 2

432449107903. 3

432449107904. 4

Question Number : 27 Question Id : 43244927379 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The efficiency of a power transformer is of the order of :

(1) 60%

(2) 70%

(3) 98%

(4) 80%

Options :

432449107905. 1

432449107906. 2

432449107907. 3

432449107908. 4

Question Number : 28 Question Id : 43244927380 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the field of a synchronous motor is under excited. The power factor will be :

(1) zero

(2) unity

(3) lagging

(4) leading

Options :

432449107909. 1

432449107910. 2

432449107911. 3

432449107912. 4

Question Number : 29 Question Id : 43244927381 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a three phase, 4 pole 50 Hz synchronous machine, if the frequency, pole number and load torque will be halved. The motor speed will be :

(1) 3000 rpm

(2) 1500 rpm

(3) 750 rpm

(4) 1000 rpm

Options :

432449107913. 1

432449107914. 2

432449107915. 3

432449107916. 4

Question Number : 30 Question Id : 43244927382 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a purely capacitive circuit, if the supply If frequency is reduced to $\frac{1}{4}$, the current will :

(1) be reduced by half

(2) be doubled

(3) be reduced to one-fourth

(4) be four times higher

Options :

432449107917. 1

432449107918. 2

432449107919. 3

432449107920. 4

Question Number : 31 Question Id : 43244927383 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is **not** correct with respect to short circuit test on transformer ?

(1) It is used to find out the copper losses in the transformer

(2) The short circuit test is must conveniently made by short circuiting the LT winding

(3) It is used to determine the core loss in the transformer

(4) Short circuit test is performed at rated current

Options :

432449107921. 1

432449107922. 2

432449107923. 3

432449107924. 4

Question Number : 32 Question Id : 43244927384 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The power factor of a purely resistive circuit is :

(1) unity

(2) zero

(3) leading

(4) Lagging

Options :

432449107925. 1

432449107926. 2

432449107927. 3

432449107928. 4

Question Number : 33 Question Id : 43244927385 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : A synchronous motor always runs at synchronous speed.

Reason (R) : Its rotor speed is locked with the stator rotating magnetic field.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449107929. 1

432449107930. 2

432449107931. 3

432449107932. 4

Question Number : 34 Question Id : 43244927386 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : Superposition theorem is applicable only to linear circuits.

Reason (R) : The response in non-linear circuits is not directly proportional to excitation.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449107933. 1

432449107934. 2

432449107935. 3

432449107936. 4

Question Number : 35 Question Id : 43244927387 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following statements :

A. Stator winding is energized with balanced three phase supply

B. Spatially displaced currents create phase shifted fluxes

C. Resultant magnetic field rotates at synchronous speed

D. Rotor conductor cuts the rotating flux

E. Electromagnetic torque is produced

Choose the **correct** answer from the options given below :

(1) A, B, C, D, E

(2) A, C, B, D, E

(3) B, C, A, D, E

(4) C, A, B, D, E

Options :

432449107937. 1

432449107938. 2

432449107939. 3

432449107940. 4

Question Number : 36 Question Id : 43244927388 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the element in the following is **not** bilateral ?

(1) Resistor

(2) Inductor

(3) Capacitor

(4) Transistor

Options :

432449107941. 1

432449107942. 2

432449107943. 3

432449107944. 4

Question Number : 37 Question Id : 43244927389 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

AC voltage regulators are widely used in :

(1) Fan drives

(2) Traction Drives

(3) Synchronous motor drives

(4) Slip-power recovery scheme of slipring induction motor

Options :

432449107945. 1

432449107946. 2

432449107947. 3

432449107948. 4

Question Number : 38 Question Id : 43244927390 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a Zener diode :

(1) Forward voltage rating is high

(2) Sharp breakdown occurs at low reverse voltage

(3) Negative resistance characteristics exists

(4) Sharp breakdown never occurs

Options :

432449107949. 1

432449107950. 2

432449107951. 3

432449107952. 4

Question Number : 39 Question Id : 43244927391 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	LED	I.	Heavy doping
B.	Avalanche photo diode	II.	Coherent Radiation
C.	Tunnel diode	III.	Spontaneous Emission
D.	LASER	IV.	Current Gain

Choose the **correct** answer from the options given below :

(1) A-I, B-II, C-IV, D-III

(2) A-II, B-III, C-I, D-IV

(3) A-III, B-IV, C-I, D-II

(4) A-II, B-I, C-IV, D-III

Options :

432449107953. 1

432449107954. 2

432449107955. 3

432449107956. 4

Question Number : 40 Question Id : 43244927392 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Tunnel diode	I.	Reading of film Sound Track
B.	PIN diode	II.	High frequency oscillator circuits
C.	Zener diode	III.	Very high frequency switching circuits
D.	Photodiode	IV.	Reference voltage

Choose the **correct** answer from the options given below :

(1) A-III, B-II, C-IV, D-I

(2) A-I, B-IV, C-III, D-II

(3) A-II, B-III, C-I, D-IV

(4) A-II, B-III, C-IV, D-I

Options :

432449107957. 1

432449107958. 2

432449107959. 3

432449107960. 4

Question Number : 41 Question Id : 43244927393 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I (Semiconductor devices)		**List - II (Characteristics)**
A.	BJT	I.	Population Inversion
B.	MOS capacitor	II.	Pinch-off Voltage
C.	Laser Diode	III.	Early Effect
D.	JFET	IV.	Fat-band Voltage

Choose the **correct** answer from the options given below :

(1) A-III, B-I, C-IV, D-II

(2) A-I, B-IV, C-III, D-II

(3) A-III, B-IV, C-I, D-II

(4) A-III, B-II, C-I, D-IV

Options :

432449107961. 1

432449107962. 2

432449107963. 3
432449107964. 4

Question Number : 42 Question Id : 43244927394 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : An ADC converts digital signal into Analog signals.

Reason (R) : DAC performs the inverse operation of ADC.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449107965. 1
432449107966. 2
432449107967. 3
432449107968. 4

Question Number : 43 Question Id : 43244927395 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : A Zener diode is used for voltage regulation.

Reason (R) : It maintains a nearly constant voltage in reverse breakdown region.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449107969. 1
432449107970. 2
432449107971. 3
432449107972. 4

Question Number : 44 Question Id : 43244927396 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Operation of an Op-Amp with Negative feedback :

A. Error voltage becomes very small

B. Output stabilizes

C. Input signal applied

D. Feedback signal is generated

Choose the **correct** answer from the options given below :

(1) A, B, C, D

(2) B, A, D, C

(3) D, C, A, B

(4) C, D, A, B

Options :

432449107973. 1
432449107974. 2
432449107975. 3
432449107976. 4

Question Number : 45 Question Id : 43244927397 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For frequency Response Analysis of an operational Amplifier :

A. Identify dominant poles

B. Draw Bode magnitude plot

C. Apply gain-bandwidth product concept

D. Determine closed loop gain

E. Assess stability margin

Choose the **correct** answer from the options given below :

(1) A, B, C, D, E

(2) A, B, D, E, C

(3) D, A, E, B, C

(4) D, A, C, B, E

Options :

432449107977. 1

432449107978. 2

432449107979. 3

432449107980. 4

Question Number : 46 Question Id : 43244927398 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Direct laying method of laying underground cables has the drawback of :

A. High maintenance cost

B. Localisation of fault is difficult

C. Possibility of damage of cable sheath owing to undergoing chemical changes due to impurities present in soil

D. Risk of cable being damaged

E. Low maintenance cost

Choose the **correct** answer from the options given below :

(1) A, B and D only

(2) B, D and E only

(3) A, B, C and D only

(4) A, B and C only

Options :

432449107981. 1

432449107982. 2

432449107983. 3

432449107984. 4

Question Number : 47 Question Id : 43244927399 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In load flow studies of a power system, a voltage control bus is specified by :

(1) Real power and reactive power

(2) Reactive power and voltage magnitude

(3) Voltage magnitude and phase angle

(4) Real power and voltage magnitude

Options :

432449107985. 1

432449107986. 2

432449107987. 3

432449107988. 4

Question Number : 48 Question Id : 43244927400 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The maximum short circuit current occurs in case of :

(1) Three phase bolted fault

(2) Double line to ground fault

(3) Line to line fault

(4) Single line to ground fault

Options :

432449107989. 1

432449107990. 2

432449107991. 3

432449107992. 4

Question Number : 49 Question Id : 43244927401 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Power factor can be improved by installing a device in parallel with load which has :

(1) Leading reactive power

(2) Lagging reactive power

(3) Apparent power

(4) Resistive power

Options :

432449107993. 1

432449107994. 2

432449107995. 3

432449107996. 4

Question Number : 50 Question Id : 43244927402 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The per unit impedance of a circuit is 0.25. If the base kV and base MVA are halved, then the new value of p.u. impedance of the circuit will be :

(1) 0.4

(2) 0.25

(3) 0.5

(4) 0.75

Options :

432449107997. 1

432449107998. 2

432449107999. 3

432449108000. 4

Question Number : 51 Question Id : 43244927403 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A thyristor controlled reactor is used to get :

(1) Variable resistance

(2) Variable capacitance

(3) Variable inductance

(4) Improved reactor power factor

Options :

432449108001. 1

432449108002. 2

432449108003. 3

432449108004. 4

Question Number : 52 Question Id : 43244927404 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The Insulation Resistance of a 3 km long cable is 200 MΩ. For length of 15 km, the Insulation Resistance will be :

(1) 40 MΩ

(2) 200 MΩ

(3) 1000 MΩ

(4) 50 MΩ

Options :

432449108005. 1

432449108006. 2

432449108007. 3

432449108008. 4

Question Number : 53 Question Id : 43244927405 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In load flow studies, PV bus is treated as a PQ bus, when :

(1) Reactive power goes beyond limits

(2) Phase angle becomes high

(3) Voltage limit is violated

(4) Active power limit is violated

Options :

432449108009. 1

432449108010. 2

432449108011. 3

432449108012. 4

Question Number : 54 Question Id : 43244927406 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following is **not** the main component of hydro-electric power plant ?

(1) Surge Tank

(2) Penstock

(3) Turbine

(4) Economizer

Options :

432449108013. 1

432449108014. 2

432449108015. 3

432449108016. 4

Question Number : 55 Question Id : 43244927407 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a thermal power plant coal is used for the generation of electricity. How energy changes from one from to another before it is transformed into Electrical energy ?

(1) Heat Energy ⇒ Mechanical Energy ⇒ Electrical Energy

(2) Heat Energy ⇒ Electrical Energy ⇒ Mechanical Energy

(3) Mechanical Energy ⇒ Heat Energy ⇒ Electrical Energy

(4) Electrical Energy ⇒ Heat Energy ⇒ Mechanical Energy

Options :

432449108017. 1

432449108018. 2

432449108019. 3

432449108020. 4

Question Number : 56 Question Id : 43244927408 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Thyrite arrester	I.	Tower Location
B.	Sag Template	II.	Cross Bonding
C.	Cable Sheaths	III.	Restriking voltage
D.	Circuit Breaker	IV.	Non-linear resistor

Choose the **correct** answer from the options given below :

(1) A-IV, B-I, C-III, D-II

(2) A-IV, B-I, C-II, D-III

(3) A-I, B-IV, C-II, D-III

(4) A-IV, B-III, C-II, D-I

Options :

432449108021. 1

432449108022. 2

432449108023. 3

432449108024. 4

Question Number : 57 Question Id : 43244927409 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Three Phase Induction Motor	I.	Constant Frequency
B.	Three Phase Alternator	II.	Not self starting
C.	Transformer	III.	Always runs at less than synchronous speed
D.	Single phase Induction Motor	IV.	Always runs at synchronous speed

Choose the **correct** answer from the options given below :

(1) A-III, B-IV, C-II, D-I

(2) A-III, B-IV, C-I, D-II

(3) A-IV, B-III, C-I, D-II

(4) A-IV, B-II, C-III, D-I

Options :

432449108025. 1

432449108026. 2

432449108027. 3

432449108028. 4

Question Number : 58 Question Id : 43244927410 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : Thyristors can be turned off by gate control.

Reason (R) : Thyristors require current to fall below holding current to turn off.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449108029. 1

432449108030. 2

432449108031. 3

432449108032. 4

Question Number : 59 Question Id : 43244927411 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Load Flow Analysis	I.	V-curve
B.	Stability Studies	II.	B-coefficient
C.	Economic Load Dispatch	III.	Gauss-Seidel Method
D.	Synchronous Machine	IV.	Equal-Area Criteria

Choose the **correct** answer from the options given below :

(1) A-III, B-IV, C-I, D-II

(2) A-III, B-IV, C-II, D-I

(3) A-IV, B-III, C-I, D-II

(4) A-III, B-II, C-IV, D-I

Options :

432449108033. 1

432449108034. 2

432449108035. 3

432449108036. 4

Question Number : 60 Question Id : 43244927412 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following statements :

A. Pulverized fuel is injected into the furnace

B. Chemical Energy converted into thermal Energy

C. High temperature gases transfer heat to boiler tubes

D. Water undergoes phase change into superheated steam

E. Steam energy is delivered to turbine blades

Choose the **correct** answer from the options given below :

(1) A, B, C, D, E

(2) A, C, D, E, B

(3) A, D, E, B, C

(4) A, E, C, B, D

Options :

432449108037. 1

432449108038. 2

432449108039. 3

432449108040. 4

Question Number : 61 Question Id : 43244927413 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following statements :

A. Abnormal impedance appears on transmission line

B. Relay comparator detects deviation from set value

C. Relay output contacts close

D. Trip coil of circuit breaker is energised

E. Breaker contacts interrupt fault current

Choose the **correct** answer from the options given below :

(1) A, B, C, D, E

(2) A, C, B, D, E

(3) B, A, C, D, E

(4) C, B, A, D, E

Options :

432449108041. 1

432449108042. 2

432449108043. 3

432449108044. 4

Question Number : 62 Question Id : 43244927414 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following :

A. SCR anode is made positive with respect to cathode

B. Junction J1 and J3 become forward biased

C. Gate currents injects minority carriers

D. Regenerative feedback builds conduction

E. Latching currents sustains device ON state

Choose the **correct** answer from the options given below :

(1) A, B, C, D, E

(2) B, A, C, D, E

(3) C, B, A, D, E

(4) A, B, C, E, D

Options :

432449108045. 1

432449108046. 2

432449108047. 3

432449108048. 4

Question Number : 63 Question Id : 43244927415 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following :

For Newton-Raphson Load Flow Algorithm.

A. Power mismatch calculation

B. Initial voltage assumption

C. Jacobian matrix formulation

D. Voltage correction

Choose the **correct** answer from the options given below :

(1) A, B, C, D

(2) B, A, D, C

(3) B, A, C, D

(4) A, B, D, C

Options :

432449108049. 1

432449108050. 2

432449108051. 3

432449108052. 4

Question Number : 64 Question Id : 43244927416 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pump storage plants are used to improve :

A. Power factor

B. Diversity factor

C. Capacity factor of plant

D. Load factor of power system

E. Voltage Quality

Choose the **correct** answer from the options given below :

(1) A and B only

(2) A, B and E only

(3) B and E only

(4) C and D only

Options :

432449108053. 1
432449108054. 2
432449108055. 3
432449108056. 4

Question Number : 65 Question Id : 43244927417 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : Wind power generation depends on cube of wind speed.

Reason (R) : Kinetic Energy of wind is proportional to the square of wind speed.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449108057. 1
432449108058. 2
432449108059. 3
432449108060. 4

Question Number : 66 Question Id : 43244927418 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I		**List - II**
A.	Biomass Energy	I.	I-V Characteristics
B.	Small Hydro Energy	II.	Aerobic Digestion
C.	Solar PV System	III.	Betz's limit
D.	Wind Power Plant	IV.	Spillways

Choose the **correct** answer from the options given below :

(1) A-II, B-IV, C-III, D-I

(2) A-II, B-IV, C-I, D-III

(3) A-IV, B-II, C-I, D-III

(4) A-IV, B-II, C-III, D-I

Options :

432449108061. 1
432449108062. 2
432449108063. 3
432449108064. 4

Question Number : 67 Question Id : 43244927419 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For Photovoltaic Power Generation :

A. Electric field separates charges

B. Photon Energy exceeds bandgap

C. Electron hole pair generated

D. DC output obtained

Choose the **correct** answer from the options given below :

(1) C, B, A, D

(2) C, B, D, A

(3) B, C, A, D

(4) B, C, D, A

Options :

432449108065. 1

432449108066. 2
432449108067. 3
432449108068. 4

Question Number : 68 Question Id : 43244927420 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following are the advantages of Solar Photovoltaic System ?

A. High Green House Gas Emission
B. Low Maintenance
C. Zero Fuel Cost
D. Environmental Friendly
E. Requires Continuous Fuel Supply

Choose the **correct** answer from the options given below :

(1) B and D only
(2) B, C and D only
(3) A, B and C only
(4) B, D and E only

Options :

432449108069. 1
432449108070. 2
432449108071. 3
432449108072. 4

Question Number : 69 Question Id : 43244927421 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a sustainable development goal targeted to be achieved by 2030 ?

(1) Good health and well being
(2) Zero Hunger
(3) Gender Equality
(4) Space research

Options :

432449108073. 1
432449108074. 2
432449108075. 3
432449108076. 4

Question Number : 70 Question Id : 43244927422 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not Green house gas ?

(1) Carbon dioxide
(2) Methane
(3) Nitrogen oxide
(4) Hydrogen

Options :

432449108077. 1
432449108078. 2
432449108079. 3
432449108080. 4

Question Number : 71 Question Id : 43244927423 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which among the following has the highest share in India's installed power generation capacity ?

(1) Natural Gas
(2) Coal
(3) Solar Energy
(4) Wind Energy

Options :

432449108081. 1

432449108082. 2

432449108083. 3

432449108084. 4

Question Number : 72 Question Id : 43244927424 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match **List - I** with **List - II**.

	List - I (Wavelength Solar Spectrum)		**List - II (Solar Radiation Availability)**
A.	Ultraviolet Region	I.	9%
B.	Visible Region	II.	45%
C.	Infrared Region	III.	46%
D.	Wavelength above 2500 nm	IV.	Negligible

Choose the **correct** answer from the options given below :

(1) A-I, B-II, C-III, D-IV

(2) A-I, B-II, C-IV, D-III

(3) A-II, B-I, C-III, D-IV

(4) A-II, B-I, C-IV, D-III

Options :

432449108085. 1

432449108086. 2

432449108087. 3

432449108088. 4

Question Number : 73 Question Id : 43244927425 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : Energy conservation reduces Environmental pollution.

Reason (R) : Reduced Energy consumption leads to lower fuel consumption.

In the light of the above statements, choose the **most appropriate answer** from the options given below :

(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are correct but **(R)** is **not** the correct explanation of **(A)**

(3) **(A)** is correct but **(R)** is not correct

(4) **(A)** is not correct but **(R)** is correct

Options :

432449108089. 1

432449108090. 2

432449108091. 3

432449108092. 4

Question Number : 74 Question Id : 43244927426 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For climate change impact mitigation framework :

A. Identify Emission sources

B. Quantity Green House Gas emissions

C. Evaluate mitigation technologies

D. Implement policy measures

E. Monitor emission reduction outcomes

Choose the **correct** answer from the options given below :

(1) A, B, D, C, E

(2) A, D, B, C, E

(3) A, B, C, D, E

(4) B, A, D, C, E

Options :

432449108093. 1

432449108094. 2

432449108095. 3

432449108096. 4

Question Number : 75 Question Id : 43244927427 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A NAND circuit with positive logic will operate as :

(1) NOR with negative logic

(2) AND with negative logic

(3) OR with negative logic input

(4) NOT with negative logic output

Options :

432449108097. 1

432449108098. 2

432449108099. 3

432449108100. 4