



कोल इण्डिया लिमिटेड
Coal India Limited
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ONLINE APPLICATION FOR MANAGEMENT TRAINEES 2016-17

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Section : Professional Knowledge

Q.1 Match list I (Fourier series and Fourier transform) with list II (their properties) and select the answer using codes given below:

Question ID : 2391303112

List I	List II
A. Fourier series	1. Discrete and Periodic
B. Continuous Fourier transform	2. Continuous and Periodic
C. Discrete time Fourier series	3. Continuous and Aperiodic

- Ans
- 1. A-2, B-3, C-1
 - 2. A-3, B-2, C-1
 - 3. A-1, B-3, C-2
 - 4. A-2, B-1, C-3

Q.2 A coil of 300 turns is wound on a non-magnetic core having a mean circumference of 300mm and a cross-sectional area of 300mm². The inductance of the coil corresponding to a magnetizing current of 3A will be (Given that $\mu_0 = 4\pi \times 10^{-7} \text{H/m}$):

Question ID : 2391303036

- Ans
- 1. 37.68 μH
 - 2. 113.04 mH
 - 3. 113.04 μH
 - 4. 37.68 mH

Q.3 The materials used for permanent magnets should have:

Question ID : 2391303096

- Ans
- 1. low retentivity, high coercivity
 - 2. high retentivity, low coercivity
 - 3. high retentivity, high coercivity
 - 4. low retentivity, low coercivity

Q.4 What is the use dummy coils in DC Generators?

Question ID : 2391303041

- Ans
- 1. To enhance flux density
 - 2. To amplify voltage
 - 3. To provide mechanical balance for the rotor
 - 4. To reduce eddy current losses

Q.5

The type zero system with step input has :

Question ID : 2391303087

- Ans
- 1. high gain constant
 - 2. large steady-state error with high gain constant
 - 3. finite steady-state error
 - 4. zero steady-state error

Q.6 A buck regulator has an input voltage of 12 V and the required output is 5 V. What is the duty cycle of the regulator?

Question ID : 2391303103

- Ans
- 1. 12/5
 - 2. 5/12
 - 3. 6
 - 4. 5/2

Q.7 The area under a load curve gives:

Question ID : 2391303053

- Ans
- 1. maximum demand
 - 2. minimum demand
 - 3. energy consumed
 - 4. average demand

Q.8 Which starting method is not used in squirrel cage induction motors?

Question ID : 2391303038

- Ans
- 1. Resistance in stator circuit
 - 2. Resistance in rotor circuit
 - 3. Auto-transformer starting
 - 4. Star-delta starting

Q.9 Light activated thyristor can be used as:

Question ID : 2391303108

- Ans
- 1. Amplifier
 - 2. Oscillator
 - 3. Switch
 - 4. Filter

Q.10 Domestic consumer load is around:

Question ID : 2391303052

- Ans
- 1. 5 kW
 - 2. 120 kW
 - 3. 40 kW
 - 4. 80 kW

Q.11 RMS value of a current given by $i = 10 + 5 \cos(628t + 30^\circ)$ is:

Question ID : 2391303022

- Ans
- 1. 5 A
 - 2. 15.6 A

3. 3.53 A

4. 10.6 A

Q.12 The equation for 25 cycles current sine wave having rms value of 30 amperes, will be:

Question ID : 2391303023

Ans 1. $30 \sin 25 t$

2. $30 \sin 50 t$

3. $42.4 \sin 25 \pi t$

4. $42.4 \sin 50 \pi t$

Q.13 A single phase distribution transformer rated 10kVA, 2400/240V, 60Hz has characteristics: core loss at full voltage is 100W and copper loss at half load is 60W. What is the efficiency of the transformer when it delivers full load at lagging power factor of 0.8?

Question ID : 2391303040

Ans 1. 93.92%

2. 94.95%

3. 92.95%

4. 95.92%

Q.14 In moving coil instruments, the _____ scale is used.

Question ID : 2391303072

Ans 1. square

2. nonlinear

3. logarithmic

4. linear

Q.15 A power MOSFET is a:

Question ID : 2391303095

Ans 1. Voltage controlled device

2. None of the other options

3.

Both Voltage controlled device and Current controlled device

4. Current controlled device

Q.16 In a biased differential relay, the bias is defined as the ratio of:

Question ID : 2391303064

Ans 1. fault current and operating coil current

2.

operating coil current and restraining coil current

3.

number of turns of restraining and operating coil

4. fault current and restraining coil current

Q.17 Fusing factor of a fuse is defined as the ratio of:

Question ID : 2391303055

Ans 1.

maximum fusing current to the prospective current

2.

maximum fusing current to the cutoff current

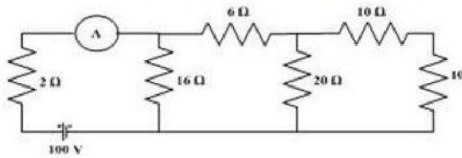
3.

minimum fusing current to the rated carrying current

4.

maximum fusing current to the rated carrying current

Q.18 For the circuit shown in the figure, the ammeter will read _____.



Question ID : 2391303020

Ans 1. 10 A

2. 20 A

3. 100 A

4. 1 A

Q.19 What is the resonance frequency ω_0 in a practical parallel resonant circuit (coil in parallel with capacitor) with coil resistance 1Ω , inductance 1H and $C=1/4\text{F}$?

Ans 1. $2\sqrt{3/4}\text{ Hz}$

2. $2\sqrt{3/4}\text{ rad/s}$

3. 2 Hz

4. 2 rad/s

Question ID : 2391303026

Q.20 To avoid cogging in induction motor, the number of stator slots should not be _____ the number of rotor slots.

Ans 1. greater than

2. dependent on

3. equal to

4. less than

Question ID : 2391303047

Q.21 Which of the following device is commonly used for lightening protection?

Ans 1. Isolator

2. Over voltage relay

3. Circuit Breaker

4. ZnO Varistor

Question ID : 2391303067

Q.22 Which of the following instrument is not affected by hysteresis and eddy current errors?

Ans 1. Electrostatic

2. Permanent magnet moving coil

3. Moving Iron

4. Dynamometer type moving coil

Question ID : 2391303071

Q.23 A SCHOTTKY diode is a:

Ans 1. Both minority and majority carrier diode

2. Minority carrier device

Question ID : 2391303093

- 3. Fast recovery diode
- 4. Majority carrier device

Q.24 Multi-meters cannot be used to measure:

Question ID : 2391303076

- Ans
- 1. resistance
 - 2. current
 - 3. voltage
 - 4. frequency

Q.25 A second-order servo has unity feedback and an open-loop transfer function: $G(s) = 500/s(s+15)$. The settling time is:

Question ID : 2391303081

- Ans
- 1. 2 sec
 - 2. 0.53 sec
 - 3. 500 sec
 - 4. 0.5 sec

Q.26 The bus admittance matrix of a power system (with respect to diagonal), has:

Question ID : 2391303059

- Ans
- 1. only value symmetry
 - 2. both position and value symmetry
 - 3. only position symmetry
 - 4. complete asymmetry

Q.27 A solid sphere made of insulating material has a radius R and has a total charge Q distributed uniformly in its volume. What is the magnitude of the electric field intensity, E , at a distance r ($0 < r < R$) inside the sphere?

Question ID : 2391303037

- Ans
- 1. $Qr/4\pi\epsilon_0R^3$
 - 2. $3Qr/4\pi\epsilon_0R^3$
 - 3. $QR/4\pi\epsilon_0r^3$
 - 4. $Q/4\pi\epsilon_0r^2$

Q.28 Which testing method is performed to determine No Load losses in DC motors?

Question ID : 2391303042

- Ans
- 1. Running down test
 - 2. Field test
 - 3. Swinburne's test
 - 4. Brake test

Q.29 The pointer returns to its zero position on removing the source producing the deflecting torque. This happens due to:

Question ID : 2391303073

- Ans
- 1. Controlling torque
 - 2. Balancing torque
 - 3. Damping torque
 - 4. Mass of pointer

Q.30 The Superposition theorem is essentially based on _____.

Question ID : 2391303019

- Ans 1. linearity
 2. duality
 3. reciprocity
 4. non-linearity

Q.31 The A, B, C, D constants of 220kV line are $A = D = 0.94 \angle 1^\circ$, $B = 130 \angle 73^\circ$, $C = 0.001 \angle 90^\circ$. If sending end voltage of the line for a given load delivered at nominal voltage is 240kV, then % voltage regulation of the line is:

Question ID : 2391303065

- Ans 1. 5
 2. 9
 3. 16
 4. 21

Q.32 Two transformers are to be operated in parallel such that they share load in proportion to their kVA ratings. The rating of the first transformer is 500kVA and its pu leakage impedance is 0.05 pu. If the rating of the second transformer is 250kVA then its pu leakage impedance is:

Question ID : 2391303106

- Ans 1. 0.025
 2. 0.1
 3. 0.05
 4. 0.2

Q.33 Find the resistance of an electric heater that absorbs 2400 W when connected to a 120 V supply.

Question ID : 2391303017

- Ans 1. 20 Ω
 2. 12 Ω
 3. 6 Ω
 4. 10 Ω

Q.34 Which law states that "the line integral of the magnetic field intensity H around a closed path is equal to the total current linked by the contour"?

Question ID : 2391303029

- Ans 1. Kirchhoff's voltage law
 2. Kirchhoff's current law
 3. Ampere's circuit law
 4. Ohm's law

Q.35 A 3-phase transformer has its primary connected in delta and secondary in star. Secondary to primary turns ratio per phase is 5. What would be the secondary voltage for a primary voltage of 400V?

Question ID : 2391303050

- Ans 1. 2000 V
 2. 80 V
 3. 3464 V
 4. 138 V

Q.36 Buchholz's relay is used to protect _____.

Question ID : 2391303058

- Ans 1. Transmission line
 2. Generator
 3. Transformer
 4. Motor

Q.37 The electric field strength at a distance point, due to a point charge, $+q$, located at the origin, is $100\mu V/m$. If the point is now enclosed by a perfectly conducting metal sheet sphere at the point p , outside the sphere, becomes:

Question ID : 2391303034

- Ans
- 1. zero
 - 2. $100\mu V/m$
 - 3. $-100\mu V/m$
 - 4. $50\mu V/m$

Q.38 The rated field current of an alternator is 2A. This alternator is developing 200V at a field current of 1A at rated speed. If its field current is made 2A at rated speed, then what would be the generated voltage practically considering armature reaction?

Question ID : 2391303049

- Ans
- 1. 380V
 - 2. 400V
 - 3. $< 400V$
 - 4. $> 400V$

Q.39 The frequency range over which the response of a system is within acceptable limits, the system is called:

Question ID : 2391303086

- Ans
- 1. Modulation frequency
 - 2. Demodulation frequency
 - 3. Carrier frequency
 - 4. Bandwidth

Q.40 How much is the base-to-emitter voltage of a transistor in the 'ON' state?

Question ID : 2391303089

- Ans
- 1. undefined
 - 2. 0.7 V
 - 3. 0 V
 - 4. 0.7 mV

Q.41 In the equations given below, which is not the Maxwell's equation?

Question ID : 2391303030

- Ans
- 1. $\text{Div}(\underline{J} + \partial\underline{D} / \partial t) = 0$
 - 2. $\nabla \cdot \underline{B} = 0$
 - 3. $\nabla \times \underline{E} = -\partial\underline{B} / \partial t$
 - 4. $\nabla \cdot \underline{D} = \rho_c$

Q.42 The steady state error of a control system can be minimized by:

Question ID : 2391303082

- Ans
- 1. none of the other options
 - 2. decreasing the gain k
 - 3. increasing the gain k
 - 4. decreasing the natural frequency of the system

Q.43 If the gain in a control system is increased:

Question ID : 2391303085

- Ans
- 1. the roots move away from the zeroes
 - 2. the roots move nearer to the zeroes

3.

the roots move away from the open loop poles

4. the position of the roots is not affected

Q.44 Which generator is used in Megger?

Question ID : 2391303069

Ans 1. PMDC generator

2. Induction generator

3. Externally excited DC generator

4. Synchronous generator

Q.45 Kelvin's double bridge is used to measure:

Question ID : 2391303075

Ans 1. high resistance

2. low capacitance

3. low resistance

4. low inductance

Q.46 8085 microprocessor has _____ individual flags during arithmetic and logic operations.

Question ID : 2391303100

Ans 1. 8

2. 16

3. 2

4. 5

Q.47 To a highly inductive circuit, a small capacitance is added in series, the angle between voltage and current will:

Question ID : 2391303035

Ans 1. increase

2. remain same

3. become indeterminate

4. decrease

Q.48 Output of NAND gate is 0, for three inputs when:

Question ID : 2391303098

Ans 1. one of the input is 1

2. none of the inputs is 1

3. all the inputs are 1

4. two of the inputs is 1

Q.49 For a single phase capacitor start induction motor which of the following statements is valid?

Question ID : 2391303110

Ans 1.

The capacitor is used for power factor improvement

2. The direction of rotation cannot be changed

3.

The direction of rotation can be changed by interchanging the supply terminals

4.

The direction of rotation can be changed by reversing the main winding terminals

Q.50 Zero sequence component is absent in case of following fault.

Question ID : 2391303068

- Ans
- 1. L - L
 - 2. All of the other options
 - 3. L - L - G
 - 4. L - G

Q.51 Normally the human body resistance in totally wet and dry condition is _____ respectively.

Question ID : 2391303062

- Ans
- 1. $1k\Omega$ and $1M\Omega$
 - 2. 0.1Ω and $10k\Omega$
 - 3. 100Ω and $1k\Omega$
 - 4. 100Ω and $10k\Omega$

Q.52 Distributed winding and short chording employed in AC machines will result in:

Question ID : 2391303109

- Ans
- 1. reduction in both emf and harmonics
 - 2. reduction in emf and increase in harmonics
 - 3. increase in both emf and harmonics
 - 4. increase in emf and reduction in harmonics

Q.53 CRGO laminations in a transformer are used to minimize:

Question ID : 2391303051

- Ans
- 1. eddy current loss
 - 2. ohmic loss
 - 3. hysteresis loss
 - 4. both eddy current and hysteresis losses

Q.54 The protection used for SCR in case of high di/dt is:

Question ID : 2391303101

- Ans
- 1. parallel capacitor
 - 2. series inductance
 - 3. snubber circuit
 - 4. fast acting fuse

Q.55 The magnetic field on the axis of a current carrying polygonal coil will have only a horizontal component parallel to the plane of the coil:

Question ID : 2391303031

- Ans
- 1. it is never possible
 - 2. if the coil is an equilateral triangle
 - 3. if the coil is a parallelogram
 - 4. if the coil is a rhombus

Q.56 Two magnetic cores A and B made up of materials with relative permeability 300 and 400 respectively have identical physical dimension then _____.

Question ID : 2391303024

- Ans
- 1. reluctance offered by A is more than B
 - 2. reluctance offered by A and B is equal
 - 3. cannot be predicted without laboratory test

4. reluctance offered by B is more than A

Q.57 As we go from generator end towards load, the severity of a particular fault:

- Ans 1. decreases
 2. does not depend on location
 3. remains same
 4. increases

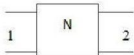
Question ID : 2391303060

Q.58 In an induction motor, the meaning of synchronous wattage means:

- Ans 1. combined stator and rotor inputs in watts
 2. stator input in watts
 3. shaft output in watts
 4. rotor input in watts

Question ID : 2391303044

Q.59 A two-port network N has transmission parameters $\begin{bmatrix} A & B \\ C & D \end{bmatrix}$. The input impedance of the network at port-1, will be:



- Ans 1. AD/BC
 2. D/C
 3. AB/DC
 4. A/C

Question ID : 2391303113

Q.60 In a 3-phase controlled bridge rectifier, with an increase of the overlap angle, the output DC voltage:

- Ans 1. increases
 2. depends upon load inductance
 3. does not change
 4. decreases

Question ID : 2391303097

Q.61 Norton's theorem when applied to DC Circuit results in:

- Ans 1. a current source alone
 2. a voltage source alone
 3. a current source with a resistance in parallel
 4. a voltage source with a resistance in series

Question ID : 2391303016

Q.62 Which load flow method is sensitive to initial guess in respect of reliability of convergence of solution?

- Ans 1. Newton - Raphson method
 2. Runge - Kutta method
 3. Gauss - Seidel method
 4. Gauss elimination

Question ID : 2391303061

Q.63

Question ID : 2391303077

Which of the points below correctly complete(s) the given statement?

The Lissajous patterns help in the measurement of _____.

1. phase difference between two sine waves only
2. frequency of one waveform only, if the frequency of other waveform is known

- Ans
- 1. Only 2
 - 2. Both 1 and 2
 - 3. Neither 1 nor 2
 - 4. Only 1

Q.64 A transformer having a turn's ratio 1:5 and a resistance of 500Ω is connected across the secondary terminals. What is the equivalent resistance for the current flowing in the primary?

- Ans
- 1. 100 Ω
 - 2. 10 Ω
 - 3. 20 Ω
 - 4. 50 Ω

Question ID : 2391303043

Q.65 A circuit contains two unequal resistances in parallel, then:

- Ans
- 1. large current flows in larger value resistance
 - 2. current is same in both
 - 3. smaller current flows in smaller value resistance
 - 4. potential difference across each is same

Question ID : 2391303018

Q.66 For an alternating square wave, the form factor is _____.

- Ans
- 1. 1.11
 - 2. 1.00
 - 3. 1.414
 - 4. 3.14

Question ID : 2391303021

Q.67 The Fourier series coefficient of signal $x(t)$ is C_K , then what will be Fourier series coefficient of the signal $x(0.5t) + x(t - 0.5) + x(-2t)$?

- Ans
- 1. $C_K(1 + e^{-j\omega 0.5k}) + C_{-K}$
 - 2. $C_K(2 + e^{-j\omega 0.5k}) + 0.5 C_{-K}$
 - 3. $C_K(1 + e^{-j\omega 0.5k}) + C_K$
 - 4. $C_K(e + e^{-j\omega 0.5k}) + 0.5 C_K$

Question ID : 2391303114

Q.68 Which type of distance relay is not affected by fault arc resistance?

- Ans
- 1. Mho
 - 2. Differential
 - 3. Reactance
 - 4. Impedance

Question ID : 2391303063

Q.69 The z-transform of signal is given by $C(z) = \frac{1z^{-1}(1-z^{-4})}{4(1-z^{-1})^2}$. Its final value is:

Ans

Question ID : 2391303115

- 1. 1.0
- 2. 1/4
- 3. infinity
- 4. zero

Q.70 The sweep generator of a CRO is used to produce:

Question ID : 2391303078

- Ans 1. sinusoidal voltage for the vertical deflection of electron beam
2. saw tooth voltage for the horizontal deflection of electron beam
3. saw tooth voltage for the vertical deflection of electron beam
4. sinusoidal voltage for the horizontal deflection of electron beam

Q.71 In 8085 microprocessor, instruction XCHG is:

Question ID : 2391303099

- Ans 1. 3 byte instruction
2. 2 byte instruction
3. 5 byte instruction
4. 1 byte instruction

Q.72 A 3-phase synchronous motor, connected to AC mains, is running at full load and unity power factor. If its shaft load is reduced to half, with field current held constant, its new power factor will be:

Question ID : 2391303111

- Ans 1. lagging
2. leading
3. unity
4. dependent on machine parameters

Q.73 Let A and B be feed-forward and feedback paths in a control system to control the voltage. The overall voltage gain of this closed loop system is:

Question ID : 2391303080

- Ans 1. $(1+AB)/A$
2. $A/(1+AB)$
3. $(1+AB)/B$
4. $B/(1+AB)$

Q.74 For dynamic equalizing circuit used for series connected SCRs, the choice of C is based on:

Question ID : 2391303105

- Ans 1. rise time characteristics
2. turn-on characteristics
3. turn-off characteristics
4. reverse recovery characteristics

Q.75 The transfer function of a system is defined as:

Question ID : 2391303079

Ans

- 1. laplace transform of the step response
- 2. laplace transform of the sinusoidal input
- 3. laplace transform of the ramp response
- 4. laplace transform of the impulse response

Q.76 The length of the air gap under the poles of a DC machine is not kept uniform so as to:

- Ans 1. obtain a suitable main field flux
- 2. obtain better cooling
 - 3. obtain sinusoidal armature mmf wave
 - 4. minimize the effect of armature mmf on main field

Question ID : 2391303046

Q.77 A conducting SCR can be opened by reducing _____ to zero.

- Ans 1. supply current
- 2. supply voltage
 - 3. anode current
 - 4. grid voltage

Question ID : 2391303094

Q.78 If the gain of the critically damped system is slightly increased, it will

- Ans 1. become an under-damped system
- 2. remain a critically damped system
 - 3. become an over-damped system
 - 4. become an oscillatory system

Question ID : 2391303084

Q.79 Which statement BEST describes the operation of a negative-edge-triggered D flip-flop?

- Ans 1. The Q output is always identical to D input
- 2. The logic level at the D input is transferred to Q on NGT of CLK
 - 3. The Q output is always identical to the CLK input if the D input is high
 - 4. The Q output is always identical to D input when CLK = PGT

Question ID : 2391303090

Q.80 A zero to 300V voltmeter has an error of 12% on full scale deflection. If the true voltage is 30V then the range of readings on this voltmeter will be:

- Ans 1. 20 to 40 V
- 2. 26.4 to 33.6 V
 - 3. 29.4 to 30.6 V
 - 4. 24 to 36 V

Question ID : 2391303107

Q.81 An energy meter is designed to make hundred revolutions of disc for 1 unit of energy. Calculate the number of revolutions made by the disc when connected to load carrying 50A at 230V and 0.6pf for an hour.

- Ans 1. 920 revolutions
- 2. 690 revolutions

Question ID : 2391303070

- 3. 575 revolutions
- 4. 1150 revolutions

Q.82 The main objective of the governor system in power systems for all types of turbines is to control the:

- Ans
- 1. Reactive power output
 - 2. Voltage phase angle
 - 3. Frequency
 - 4. Voltage magnitude

Question ID : 2391303056

Q.83 An alternating voltage has frequency of 50 Hz with peak value of 100V. In how many seconds after the zero value, voltage will attain the value of 50V?

- Ans
- 1. 1/300 sec
 - 2. 1/360 sec
 - 3. 1/180 sec
 - 4. 1/600 sec

Question ID : 2391303027

Q.84 A DC shunt motor of 200V, 10.5A, 2000 rpm has an armature resistance of 0.5Ω and field winding resistance of 400Ω . It drives a load whose torque is constant at rated motor torque. What is the value of armature current if the source voltage drops to 175V?

- Ans
- 1. 12.4A
 - 2. 10.7A
 - 3. 9.7A
 - 4. 11.4A

Question ID : 2391303039

Q.85 A 10kW, 400V, 3 phase induction motor is started with direct-on-line starter. The motor current and power factor at starting will be _____ respectively.

- Ans
- 1. 20A, 0.6
 - 2. 20A, 0.2
 - 3. 120A, 0.2
 - 4. 120A, 0.6

Question ID : 2391303048

Q.86 The most suitable material for spring in majority of the measuring instruments, except in low resistance instruments is:

- Ans
- 1. Phosphor-bronze
 - 2. Platinum-silver
 - 3. Hard rolled silver
 - 4. Silicon-bronze

Question ID : 2391303074

Q.87 The % resistance of a 100 kVA, 5 kV, 5Ω reactance is given by:

- Ans
- 1. 2%
 - 2. 20%
 - 3. 40%
 - 4. 4%

Question ID : 2391303054

Q.88 It is desirable to avoid the use of the differentiator in the control system design, because:

- Ans
- 1. it develops noise and will saturate the amplifier

Question ID : 2391303083

- 2. its size is big
- 3. none of the other options
- 4. it is not economical

Q.89 Preferred motor in electric shaver is:

Question ID : 2391303045

- Ans
- 1. Shaded pole motor
 - 2. Universal motor
 - 3. Hysteresis motor
 - 4. Reluctance motor

Q.90 In a star-delta transmission system the CTs used in differential protection will be connected in:

Question ID : 2391303057

- Ans
- 1. star connection on both sides of transformer
 - 2. star connection on star side and delta connection on delta side
 - 3. delta connection on star side and star connection on delta side
 - 4. delta connection on both sides of transformer

Q.91 The transfer function of a system is given as $100 / (s^2 + 20s + 100)$. This system is:

Question ID : 2391303088

- Ans
- 1. an unstable system
 - 2. an over-damped system
 - 3. an under-damped system
 - 4. a critically damped system

Q.92 A logic circuit that provides a HIGH output if one input or the other input, but not both, is HIGH, is:

Question ID : 2391303091

- Ans
- 1. OR gate
 - 2. NOT gate
 - 3. Ex-OR gate
 - 4. Ex-NOR gate

Q.93 A coil of 150 turns is linked with a flux of 10 mWb when carrying a current of 10 A, inductance of the coil is:

Question ID : 2391303025

- Ans
- 1. 1.5 H
 - 2. 15 H
 - 3. 0.15 H
 - 4. 15 mH

Q.94 A solid in which the atoms are arranged in a regular periodic geometrical pattern is known as:

Question ID : 2391303066

- Ans
- 1. conductor
 - 2. semi-conductor
 - 3. insulator
 - 4. crystal

Q.95 Which of the following is the main advantage of SMPS over linear power supply?

- Ans
- 1. No transformer is required
 - 2. Higher efficiency
 - 3. No filter required
 - 4. Only one stage of conversion

Question ID : 2391303104

Q.96 The electric and magnetic fields are:

- Ans
- 1. two distinctly separate and isolated phenomena
 - 2. two parts of one unique phenomena
 - 3. two conflicting phenomena, one suppressing the other
 - 4. two sequential phenomena, with a retardation effect between the two fields

Question ID : 2391303032

Q.97 A modern power semiconductor device that combines the characteristics of BJT and MOSFET is:

- Ans
- 1. IGBT
 - 2. GTO
 - 3. FCT
 - 4. MCT

Question ID : 2391303102

Q.98 How many 3-line-to-8-line decoders are required for a 1-of-32 decoder?

- Ans
- 1. 4
 - 2. 1
 - 3. 8
 - 4. 2

Question ID : 2391303092

Q.99 The total charge that has entered circuit element is $q(t) = 0.50(1 - e^{-5t})$ when $t \geq 0$ and $q(t) = 0$ when $t < 0$. Determine the current in this circuit element for $t \geq 0$.

- Ans
- 1. $i(t) = -0.250e^{-5t}$ A
 - 2. $i(t) = 0.250e^{-5t}$ A
 - 3. $i(t) = 0.50(1 - e^{-5t})$ A
 - 4. $i(t) = 0.50(t + 0.2e^{-5t})$ A

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Q.10 Which of the following does not pertain to the equation $\nabla \cdot \underline{B} = 0$?

- Ans
- 1. Single magnetic pole cannot exist
 - 2. There are no sinks and sources for magnetic field
 - 3. Magnetic field is perpendicular to the electric field
 - 4. Magnetic field is solenoidal

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