Andhra Pradesh State Council of Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Electrical Engineering 30th May 2024 Shift 2
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No

Show Progress Bar :	No
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Electrical Engineering

Section Id :	33300850
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	120
Section Marks :	120
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 3330085881 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The resistance of a copper motor winding at room temperature (20° C) is 3.42 Ω. After extended operation at full load, the motor winding measures 4.22 Ω. Determine the rise of temperature. The temperature coefficient α is 0.00426.

Options :

1. ✖ 79.6° C

2. ✖ 89.6° C

3. ✖ 69.6° C

4. ✔ $59.6^{\circ}C$

Question Number : 2 Question Id : 3330085882 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A single-phase AC voltage source has 200V (RMS) and a system connected consumes an active power of 300 Watts. What is the reactive power consumed by the system if 2.5A (RMS) current is drawn?

Options :

1. ✖ 200 VAR

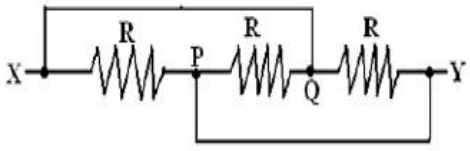
2. ✖ 300 VAR

3. ✔ 400 VAR

4. ✖ 500 VAR

Question Number : 3 Question Id : 3330085883 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equivalent resistance between the points X & Y of the circuit shown below is_____Ω.



Options :

1.

✔ $\frac{1}{3}R$

2. ✖ $\frac{3}{2}R$

3. ✖ (2x3) R

4. ✖ (2+3) R

Question Number : 4 Question Id : 3330085884 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following can produce maximum induced voltage

Options :

1. ✖ 1A DC current

2. ✖ 50A DC current

3. ✖ 1A, 60Hz AC current

4. ✔ 1A, 500Hz AC current

Question Number : 5 Question Id : 3330085885 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An electric fan and a heater are marked 100W, 220V and 1000W, 220V respectively. The resistance of the heater is

Options :

1. ✖ Zero

2. ✖ Greater than that of fan

3. ✔ Less than that of fan

4. ✖ Equal to that of fan

Question Number : 6 Question Id : 3330085886 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two bulbs of 100W, 200V and 150W, 200V are connected in series across a supply of 200V. The power consumed by the circuit is

Options :

1. ✖ 30 W

2. ✔ 66.67 W

3. ✖ 99.9 W

4. ✖ 12.24 W

Question Number : 7 Question Id : 3330085887 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 125V is applied across a 250V, 100W incandescent bulb. The power consumed will be

Options :

1. ✔ 25 W

2. ✖ 50 W

3. ✖ 100 W

4. ✖ 12.5 W

Question Number : 8 Question Id : 3330085888 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The power consumed by a coil is 300 watts when connected to 30V DC source and 108 watts when connected to a 30V AC source. The reactance of coil is

Options :

1. ✖ 3 ohms

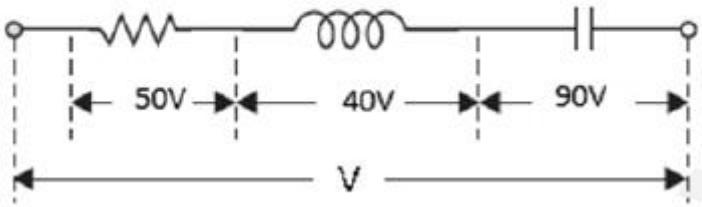
2. ✔ 4 ohms

3. ✖ 5 ohms

4. ✖ 7 ohms

Question Number : 9 Question Id : 3330085889 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The supply voltage magnitude |V| of the circuit shown below is



Options :

1. ✔ 70.7V

2. ✖ 100V

3. ✖ 180V

4. ✖ 80.8V

Question Number : 10 Question Id : 3330085890 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A two-port network is defined by the relation

$I_1 = 5V_1 + 3V_2$

$I_2 = 2V_1 - 7V_2$

The value of Z_{12} is:

Options :

1. ✖ 3 ohms

2. ✖ -3 ohms

3. ✔ 3/41 ohms

4. ✖ 2/31 ohms

Question Number : 11 Question Id : 3330085891 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following theorems is the dual of Norton's theorem?

Options :

1. ✔ Thevenin's Theorem

2. ✖ Reciprocity Theorem

3. ✖ Maximum power transfer Theorem

4. ✖ Superposition Theorem

Question Number : 12 Question Id : 3330085892 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Heating element of an electric iron is normally made-up of

Options :

1. ✔ Nichrome

2. ✖ Manganin

3. ✖ Platinum

4. ✖ Eureka

Question Number : 13 Question Id : 3330085893 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the current density inside a straight conductor is uniform over its cross-section, the flux density variation inside the conductor at different distances from its centre is

Options :

1. ✔ Linear

2. ✖

Square of the distance

3. ✖ Inverse of the distance

4. ✖ Exponential

Question Number : 14 Question Id : 3330085894 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Forced response is solution of difference equation when

Options :

1. ✖ Input is zero

2. ✔ Input is given and initial conditions are zero

3. ✖ Natural Response

4. ✖ Input is given and initial conditions are non-zero

Question Number : 15 Question Id : 3330085895 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Time scaling is an operation performed on

Options :

1. ✖ Dependent variable

2. ✔ Independent variable

3. ✖ Both dependent and independent variable

4. ✖ Neither dependent nor independent variable

Question Number : 16 Question Id : 3330085896 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The system $y(t) = x(2t) + 3$ is

Options :

1. ✖ Linear and Time-invariant

2. ✖ Causal and Linear

3. ✔ Nonlinear and Time-variant

4. ✖ Linear

Question Number : 17 Question Id : 3330085897 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The time system which operates with a continuous time signal and produces a continuous time output signal is

Options :

1. ✔ CT system

2. ✖ DT System

3. ✖ Time invariant System

4. ✖ Time variant System

Question Number : 18 Question Id : 3330085898 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the inverse Fourier transform of e^{j2t} ?

Options :

1. ✔ $2\pi\delta(\omega-2)$

2. ✖ $\pi\delta(\omega-2)$

3. ✖ $\pi\delta(\omega+2)$

4. ✖ $2\pi\delta(\omega+2)$

Question Number : 19 Question Id : 3330085899 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The trigonometric Fourier series of an even function of time does not have

Options :

1. ✖ The dc term

2. ✖ The cosine terms

3. ✔ The sine terms

4. ✖ The odd harmonic terms

Question Number : 20 Question Id : 3330085900 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If x(t) is a causal signal, then for t<0

Options :

1. ✖ $x(t) < 0$

2. ✖ $x(t)$ is not equal to zero

3. ✖ $0 < x(t) < 0$

4. ✔ $x(t) = 0$

Question Number : 21 Question Id : 3330085901 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A DC series motor is accidentally connected to single phase AC supply. The torque produced will be

Options :

1. ✖ Zero

2. ✖ Oscillating

3. ✖ Steady and unidirectional

4. ✔ Pulsating and unidirectional

Question Number : 22 Question Id : 3330085902 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ward-Leonard system of speed control is not recommended for

Options :

1. ✔ Constant speed operation

2. ✖ Wide speed

3. ✖ Frequent-motor reversed

4. ✖ Very slow speed

Question Number : 23 Question Id : 3330085903 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

To implement armature voltage control, it must be ensured that

Options :

1. ✖ It is used on shunt machine

2. ✖ It is used on series machine

3. ✔ It is used on separately excited machine

4. ✖ It is used on compound machine

Question Number : 24 Question Id : 3330085904 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The purpose of using inter-poles in large DC machines is to nullify

Options :

1. ✔ The de-magnetizing & cross magnetizing effect of armature mmf

2. ✖ The heating effect due to copper losses

3. ✖ The eddy currents

4. ✖ Constant losses

Question Number : 25 Question Id : 3330085905 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following machines run at very low speed (<100 rpm)

Options :

1. ✖ Turbo generator

2. ✖ Non-salient pole alternator

3. ✖ Salient pole alternator

4. ✔ Water wheel generator

Question Number : 26 Question Id : 3330085906 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When synchronous motor is operating at normal excitation, its operating power factor is

Options :

1. ✖ Lagging

2. ✖ Leading

3. ✔ Unity

4. ✖ Zero

Question Number : 27 Question Id : 3330085907 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Kramer system for controlling the speed of 3 phase induction motor is mostly used for motors of

Options :

1. ✔ Above 4000 kW

2. ✖ Below 4000 kW

3. ✖ Below 3000 kW

4. ✖ Above 1000 kW and below 2000 kW

Question Number : 28 Question Id : 3330085908 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The direction of rotation of DC series motor can be reversed

I. By interchanging supply terminals

II. By interchanging field terminals

Options :

1. ✖ I only

2. ✖ II only

3. ✔ Either (I) or (II)

4. ✖ Neither (I) nor (II)

Question Number : 29 Question Id : 3330085909 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 20kVA, 2000/200 V single-phase transformer has name-plate leakage impedance of 8%. Voltage required to be applied on HV side to circulate full load current with LV winding short circuited will be

Options :

1. ✖ 16 V

2. ✖ 56.56 V

3. ✔ 160 V

4. ✖ 568.68 V

Question Number : 30 Question Id : 3330085910 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The full load copper-loss and iron-loss of a transformer are 6400W and 5000W respectively. The copper-loss and iron-loss at half full-load will be respectively

Options :

1. ✖ 3200 W and 2500 W

2. ✖ 3200 W and 5200 W

3. ✖ 1600 W and 1250 W

4. ✔ 1600 W and 5000 W

Question Number : 31 Question Id : 3330085911 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

A 4kVA, 400V/200V single phase transformer has resistance of 0.02 pu and reactance of 0.06 pu. The resistance and reactance referred to HV side are:

Options :

1. ✖ 0.2 ohm and 0.6 ohm

2. ✔ 0.8 ohm and 2.4 ohm

3. ✖ 0.08 ohm and 0.24 ohm

4. ✖ 1 ohm and 3 ohm

Question Number : 32 Question Id : 3330085912 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An induction motor when started on load does not accelerate up to full speed but runs at $1/7^{th}$ of the rated speed. The motor is said to be

Options :

1. ✖ Locking

2. ✖ Plugging

3. ✔ Crawling

4. ✖ Cogging

Question Number : 33 Question Id : 3330085913 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The supply voltage to an induction motor is reduced by 10%. By what percentage approximately will the maximum torque decrease?

Options :

1. ✖ 5%

2. ✖ 10%

3. ✔ 20%

4. ✖ 40%

Question Number : 34 Question Id : 3330085914 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Breakdown torque in a 3-phase induction motor of negligible stator impedance is

Options :

1. ✖ Directly proportional to rotor resistance

2. ✖ Inversely proportional to rotor resistance

3. ✖ Directly proportional to rotor leakage reactance

4. ✔ Inversely proportional to rotor leakage reactance

Question Number : 35 Question Id : 3330085915 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the frequency of rotor current of a 50Hz induction motor operating at 2% slip?

Options :

1. ✖ 50Hz

2. ✖ 100Hz

3. ✖ 2Hz

4. ✔ 1Hz

Question Number : 36 Question Id : 3330085916 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Starting torque in the case of a 3-phase synchronous motor is

Options :

1. ✖ Low

2. ✔ Zero

3. ✖ High

4. ✖ Very low

Question Number : 37 Question Id : 3330085917 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 3-phase induction motor is operated with rotor blocked, its power factor is

Options :

1. ✖ 0.9 lag

2. ✔ 0.2 lag

3. ✖ 0.9 lead

4. ✖ 0.2 lead

Question Number : 38 Question Id : 3330085918 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Surge Impedance of a 3-Phase 400kV transmission line is 400ohm. The Surge Impedance Loading (SIL) is:

Options :

1. ✔ 400MW

2. ✖ 100MW

3. ✖ 1600MW

4. ✖ 200MW

Question Number : 39 Question Id : 3330085919 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a short transmission line, voltage regulation is zero only when the load at the receiving end operates at

Options :

1. ✖ Unity power factor

2. ✖ 0.707 (lag)

3. ✔ Leading power factor

4. ✖ Lag or lead power factor

Question Number : 40 Question Id : 3330085920 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two insulator discs of identical capacitance value C makeup a string for a 22kV, 50Hz, single phase transmission line. If the pin-to-earth capacitance is also C, then the string efficiency is:

Options :

1. ✖ 50%

2. ✔ 75%

3. ✖ 90%

4. ✖ 86%

Question Number : 41 Question Id : 3330085921 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The incremental cost characteristics of two generators delivering a total load of 200MW are as follows:
$IC_1 = 2 + 0.01P_1$ Rs/MWh
$IC_2 = 1.6 + 0.02P_2$ Rs/MWh
What should be the values of P_1 and P_2 for economic operation?

Options :

1. ✖ $P_1 = P_2 = 100MW$

2. ✖ $P_1 = 80MW; P_2 = 120MW$

3. ✖ $P_1 = 200MW; P_2 = 0\ MW$

4. ✔ $P_1 = 120MW; P_2 = 80\ MW$

Question Number : 42 Question Id : 3330085922 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The main objective of Load Frequency controller is to apply control of

Options :

1. ✖ Frequency alone

2. ✔ Frequency and at the same time of real power exchange via the outgoing lines

3. ✖ Reactive power only

4. ✖ Frequency and bus voltages

Question Number : 43 Question Id : 3330085923 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 100kVA Generator has 10% reactance. Its short circuit kVA is

Options :

1. ✖ 100 kVA

2. ✖ 500 kVA

3. ✔ 1000 kVA

4. ✖ 10000 kVA

Question Number : 44 Question Id : 3330085924 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If all the sequence voltages at the fault point in a power system are equal, then the fault is

Options :

1. ✖ Three phase fault

2. ✖ LG fault

3. ✖ LL fault

4. ✔ LLG fault

Question Number : 45 Question Id : 3330085925 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The magnitude of zero sequence current of a generator for LG fault is 2.4 p. u. The current through the neutral during fault in p. u is

Options :

1. ✖ 2.4

2. ✖ 0.8

3. ✔ 7.2

4. ✖ 0.24

Question Number : 46 Question Id : 3330085926 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fault calculations using computer program are usually done by

Options :

1. ✖ Y-Bus Method

2. ✔ Z-Bus Method

3. ✖ Using Y-Bus or Z-Bus

4. ✖ Using both Y-Bus and Z-Bus

Question Number : 47 Question Id : 3330085927 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a requirement for site selection of hydroelectric power plant?

Options :

1. ✖ Large catchment area

2. ✖ Rocky land

3. ✔ Sedimentation

4. ✖ Availability of water

Question Number : 48 Question Id : 3330085928 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which component of gas turbine power plant is main cause of its low efficiency?

Options :

1. ✔ Compressor

2. ✖ Starting motor

3. ✖ Gas turbine

4. ✖ Combustion chamber

Question Number : 49 Question Id : 3330085929 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A protection system engineer is planning to provide the complete protection for 3 phase transmission line, he can achieve this by

Options :

1. ✖ Three phase fault relays and three earth fault relays

2. ✖ Three phase fault relays and two earth fault relays

3. ✖ Two phase fault relays and two earth fault relays

4. ✔ Two phase fault relays and one earth fault relays

Question Number : 50 Question Id : 3330085930 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a given power system, its zero and maximum regulation will occur at the impedance angle of

Options :

1. ✔ 45°

2.

✖ 90°

3. ✖ 0°

4. ✖ 60°

Question Number : 51 Question Id : 3330085931 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following circuit breaker take minimum time in installation?

Options :

1. ✖ Air blast circuit breakers

2. ✖ Minimum oil circuit breakers

3. ✖ Bulk oil circuit breakers

4. ✔ Sulphur Hexafluoride (SF_6) circuit breakers

Question Number : 52 Question Id : 3330085932 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Efficient Line-Commutated Converter (LCC) HVDC converters generally use

Options :

1. ✖ Mercury valves

2. ✔ Thyristor

3. ✖ Toggle switches

4. ✖ Mechanical switches

Question Number : 53 Question Id : 3330085933 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following types of faults does a bus differential relay NOT effectively detect?

Options :

1. ✖ Busbar fault between feeders

2. ✖ Open-circuit fault on one feeder

3. ✔ Internal fault within a connected transformer

4. ✖ Unbalanced current on the busbar

Question Number : 54 Question Id : 3330085934 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a multi machine interconnected power system, subsequent to a 3-phase fault, the transient stability is examined by

A. Equal-area criterion
B. Solution of swing equation

Options :

1. ✖ A only

2. ✔ B only

3. ✖ Either (A) or (B)

4. ✖ Both (A) and (B)

Question Number : 55 Question Id : 3330085935 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An alternator having an induced emf of 1.6 p.u is connected to an infinite bus of 1 p.u. If the busbar has reactance of 0.6 p.u. and alternator has reactance of 0.2 p.u., What is the maximum power that can be transferred?

Options :

1. ✔ 2 p.u

2. ✖ 2.67 p.u

3. ✖ 5 p.u

4. ✖ 6 p.u

Question Number : 56 Question Id : 3330085936 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a 220kV system, the inductance and capacitance up to the circuit breaker location are 25 mH and 0.025 micro Farads. The value of the resistor required to be connected across the breaker contacts which will give no transient oscillations is

Options :

1. ✖ 25 ohms

2. ✖ 250 ohms

3. ✔ 500 ohms

4. ✖ 1000 ohms

Question Number : 57 Question Id : 3330085937 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Y_{Bus} matrix of a 100-bus interconnected system is 90% sparse. Hence the number of transmission lines in the system must be

Options :

1. ✔ 450

2. ✖ 500

3. ✖ 900

4. ✖ 1000

Question Number : 58 Question Id : 3330085938 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider a feedback system with gain margin of about 30. At what point does Nyquist plot crosses negative real axis?

Options :

1. ✖ -3

2. ✔ -0.3

3. ✖ -30

4. ✖ -0.03

Question Number : 59 Question Id : 3330085939 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a bode magnitude plot, which one of the following slopes would be exhibited at high frequencies by a 4th order all-pole system?

Options :

1. ✔ -80dB/decade

2. ✖ -40 dB/decade

3. ✖ 40 dB/decade

4. ✖ 80 dB/decade

Question Number : 60 Question Id : 3330085940 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

State space analysis is applicable even if the initial conditions are

Options :

1. ✖ Zero

2. ✖ Infinity

3. ✖ Negative

4. ✔ Non-zero

Question Number : 61 Question Id : 3330085941 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which mechanism in control engineering implies an ability to measure the state by taking measurements at output?

Options :

1. ✖ Controllability

2. ✔ Observability

3. ✖ Differentiability

4. ✖ Adaptability

Question Number : 62 Question Id : 3330085942 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Servo motor differs from standard motor principally in that, it has

Options :

1. ✖ Entirely different construction

2. ✖ High inertia and hence high torque

3. ✖ Low inertia and low torque

4. ✔ Low inertia and higher starting torque

Question Number : 63 Question Id : 3330085943 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The characteristic equation of a system is given by,

$3S^4 + 10S^3 + 5S^2 + 2 = 0$

This system is:

Options :

1. ✖ Stable

2. ✖ Marginally Stable

3. ✔ Unstable

4. ✖ Absolutely Stable

Question Number : 64 Question Id : 3330085944 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider the following statements:

A. A system is said to be stable if its output is bounded for any input.

B. A system is stable if all the roots of the characteristic equation lie in the right half of the S-plane.

C. A system is stable if all the roots of the characteristic equation have negative real parts.

D. A second order system is always stable for finite positive values of open loop gain.

Which of the above statements are correct?

Options :

1. ✖ B, C and D

2. ✔ A only

3. ✖ B and C

4. ✖ C and D

Question Number : 65 Question Id : 3330085945 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which technique gives quick transient and stability response?

Options :

1. ✔ Root locus

2. ✖ Bode

3. ✖ Nyquist

4. ✖ Nichols

Question Number : 66 Question Id : 3330085946 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following effects in the system NOT caused by negative feedback

Options :

1. ✖ Reduction in Gain

2. ✖ Increase in band width

3. ✔ Increase in distortion

4. ✖ Reduction in output impedance

Question Number : 67 Question Id : 3330085947 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The pointer of an indicating instrument is generally made of

Options :

1. ✖ Copper

2. ✔ Aluminium

3. ✖ Silver

4. ✖ Soft steel

Question Number : 68 Question Id : 3330085948 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a CRT the magnitude of the beam current can be adjusted by a front panel control marked

Options :

1. ✔ Intensity

2. ✖ Time/div

3. ✖ Focus

4. ✖ Volts/div

Question Number : 69 Question Id : 3330085949 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In eddy current damping, the disc of an instrument is made of a material that is a

Options :

1. ✔ Conductor but non-magnetic

2. ✖ Conductor but magnetic

3. ✖ Non-conductor non-magnetic

4. ✖ Non-conductor but magnetic

Question Number : 70 Question Id : 3330085950 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In general, fluid friction damping is not employed in indicating instruments although one can find its use in

Options :

1. ✖ Dynamometer wattmeter

2. ✖ Hot-wire ammeter

3. ✖ Induction type energy meter

4. ✔ Kelvin electrostatic voltmeter

Question Number : 71 Question Id : 3330085951 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the frequency range for a headphone as a detector?

Options :

1. ✖ 20 Hz to 20 kHz

2. ✖ 10 kHz to 1 MHz

3. ✖ 10 MHz to 1 GHz

4. ✔ 250 Hz to 4 kHz

Question Number : 72 Question Id : 3330085952 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For single frequency value, the most sensitive detector is

Options :

1. ✖ Vibration galvanometer

2. ✔ Tuned detector

3. ✖ Headphone

4. ✖ Oscillator

Question Number : 73 Question Id : 3330085953 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Match List-I (Instrument) and List-II (Error) and select the correct answer using the code given below the lists:

List-I	List-II
A. PMMC voltmeter	P. Eddy current error
B. AC ammeter	Q. Phase angle error
C. Current Transformer	R. Braking system error
D. Energy meter	S. Temperature error

Options :

1. ✖ A - Q B - R C - S D - P

2. ✔ A - S B - P C - Q D - R

3. ✖ A - Q B - P C - S D - R

4. ✖ A - S B - R C - Q D – P

Question Number : 74 Question Id : 3330085954 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 0 to 300 V voltmeter has an error of $\pm 2\%$ of FSD. What is the range of readings if true voltage is 30V?

Options :

1. ✔ 24 V – 36 V

2. ✖ 20 V – 40 V

3. ✖ 29.4 V – 30.6 V

4. ✖ 20 V – 30 V

Question Number : 75 Question Id : 3330085955 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A moving-coil instrument gives full-scale deflection for 1 mA and has a resistance of 5 ohms. If a resistance of 0.55 ohms is connected in parallel to the instrument, what is the maximum value of current it can measure?

Options :

1. ✖ 5 mA

2. ✔ 10 mA

3. ✖ 50 mA

4. ✖ 100 mA

Question Number : 76 Question Id : 3330085956 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A shunt resistance of 25 ohms is required for extending the range of an ammeter from 100μA to 500μA. The value of internal resistance of this ammeter will be

Options :

1. ✖ 25 ohms

2. ✖ 50 ohms

3. ✔ 100 ohms

4. ✖ 1000 ohms

Question Number : 77 Question Id : 3330085957 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An energy-meter having a meter constant of 1200 rev/kWh is found to make 5 revolutions in 75s. The load power is

Options :

1. ✖ 500 W

2. ✖ 100 W

3. ✔ 200 W

4. ✖ 1000 W

Question Number : 78 Question Id : 3330085958 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a valid form of a diode equivalent circuit?

Options :

1. ✖ Piecewise Linear Model

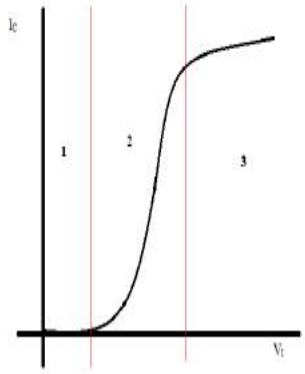
2. ✖ Ideal Diode Model

3. ✖ Simplified Model

4. ✔ Differential Model

Question Number : 79 Question Id : 3330085959 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider the graph of I_C v/s V_I shown below for a transistor. Find the correct relation for region 3 in the diagram.



Options :

1. ✔ $I_C = I_{C(sat)}$ and $V_{CE} = V_{CE(sat)}$

2. ✖ $I_C = I_{C(sat)}$ and $V_{CE} = V_{CC}$

3. ✖ $I_C = \beta I_B$ and $V_{CE} = V_{CE(sat)}$

4. ✖ $I_C = \beta I_B$ and $V_{CE} = V_{CC}$

Question Number : 80 Question Id : 3330085960 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which filter type is called a flat-flat filter?

Options :

1. ✖ Cauer filter

2. ✔ Butterworth filter

3. ✖ Chebyshev filter

4. ✖ Band-reject filter

Question Number : 81 Question Id : 3330085961 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following combinations of logic gates can decode binary 1101?

Options :

1. ✖ One 4-input AND gate

2. ✖ One 4-input AND gate, one OR gate

3. ✔ One 4-input AND gate, one inverter

4. ✖ One 4-input NAND gate, one inverter

Question Number : 82 Question Id : 3330085962 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The circuits of NOR based S-R latch are classified as asynchronous sequential circuits, why?

Options :

1. ✖ Because of inverted outputs

2. ✖ Because of triggering functionality

3. ✔ Because of cross-coupled connection

4. ✖ Because of inverted outputs & triggering functionality

Question Number : 83 Question Id : 3330085963 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In 8085, the software interrupt is.?

Options :

1. ✖ INTR

2. ✖ RST-5.5

3. ✖ TRAP

4. ✔ RST-5

Question Number : 84 Question Id : 3330085964 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Darlington pair is mainly used for

Options :

1. ✔ Impedance matching

2. ✖ Wideband voltage amplification

3. ✖ Power amplification

4. ✖ Reducing distortion

Question Number : 85 Question Id : 3330085965 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a Common Collector amplifier, the voltage gain is:

Options :

1. ✖ Constant

2. ✔ Less than 1

3. ✖ Varies with input voltage

4. ✖ Varies with load impedance

Question Number : 86 Question Id : 3330085966 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

IGBTs are becoming popular due to

Options :

1. ✔ High resonance voltage or current

2. ✖ Low resonance voltage or current

3. ✖ Low speed switching capability

4. ✖ Low voltage or current handling capacity

Question Number : 87 Question Id : 3330085967 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

It is possible for an enable or strobe input to undergo an expansion of two or more MUX ICs to the digital multiplexer with the proficiency of large number of

Options :

1. ✔ Inputs

2. ✖ Outputs

3. ✖ Selection lines

4. ✖ Enable lines

Question Number : 88 Question Id : 3330085968 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The classic multivibrator circuit is known as

Options :

1. ✖ Metal-coupled multivibrator

2. ✔ Plate-coupled multivibrator

3. ✖ Parallel-plate coupled multivibrator

4. ✖ Alternate-plate coupled multivibrator

Question Number : 89 Question Id : 3330085969 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which general register or general register pair of 8085 processor is incremented/decremented by 2 during PUSH and POP instructions?

Options :

1. ✖ H-L

2. ✖ D-E

3. ✔ Stack pointer

4. ✖ Program counter

Question Number : 90 Question Id : 3330085970 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Gold doped GTOs have _____ as compared to the conventional GTOs

Options :

1. ✖ High turn-off time

2. ✔ Low negative gate current requirement

3. ✖ Low reverse voltage blocking capabilities

4. ✖ Lower positive gate current requirement

Question Number : 91 Question Id : 3330085971 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

On which of the following does the scale current not depend upon?

Options :

1. ✖ Effective width of the base

2. ✖ Charge of an electron

3. ✖ Electron diffusivity

4. ✔ Volume of the base-emitter junction

Question Number : 92 Question Id : 3330085972 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A single phase full-converter using R load is a _____ quadrant converter and that using an RL load without FD is a_____ quadrant converter

Options :

1. ✖ One, One

2. ✖ Two, One

3. ✔ One, Two

4. ✖ Two, Two

Question Number : 93 Question Id : 3330085973 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a half wave bridge inverter circuit, the power delivered to the load by each source is given by

Options :

1. ✖ Vs x Is

2. ✔ (Vs x Is)/2

3. ✖ 2(Vs x Is)

4. ✖ (Vs x Is)/4

Question Number : 94 Question Id : 3330085974 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The shape of the output voltage waveform in a single PWM is

Options :

1. ✖ Square wave

2. ✖ Triangular wave

3. ✔ Quasi-square wave

4. ✖ Sine wave

Question Number : 95 Question Id : 3330085975 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the rotor voltage injection method, when an external voltage source is in phase with the main voltage then speed will

Options :

1. ✖ Decrease

2. ✖ First increases then decrease

3. ✔ Increase

4. ✖ Remain unchanged

Question Number : 96 Question Id : 3330085976 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the average value of output of a chopper with duty ratio 0.5 and source voltage of 50V?

Options :

1. ✖ 50V

2. ✔ 25V

3. ✖ 200V

4. ✖ 100V

Question Number : 97 Question Id : 3330085977 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a single-phase full converter, if output voltage has peak and average voltage values of 325 V and 133V respectively, then the firing angle is

Options :

1. ✖ 40 degrees

2. ✔ 50 degrees

3. ✖ 140 degrees

4. ✖ 130 degrees

Question Number : 98 Question Id : 3330085978 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a single pulse width modulated inverter, to eliminate the third harmonic, pulse w[illegible] must be

Options :

1. ✖ 0^0

2. ✔ 120^0

3. ✖ 150^0

4. ✖ 180^0

Question Number : 99 Question Id : 3330085979 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A single-phase voltage controller has input voltage of 210V and load R=10 ohm. For 4 cycles on and 5 cycles off. The rms output voltage is

Options :

1. ✔ 140 V

2. ✖ 70V

3. ✖ 210V

4. ✖ 100V

Question Number : 100 Question Id : 3330085980 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When the gate signal from a thyristor is removed, it will remain in its forward conduction mode. This characteristic of thyristor is called

Options :

1. ✖ Get-on

2. ✖ Ever conducting

3. ✔ Latching

4. ✖ Off-blocking

Question Number : 101 Question Id : 3330085981 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which type of load can give load commutation in a single-phase thyristor bridge inverter

Options :

1. ✖ R load

2. ✖ RL load

3. ✖ RLC over damped load

4. ✔ RLC under damped load

Question Number : 102 Question Id : 3330085982 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In _____ type of modulation method, the pulse width is not equal for all the pulses.

Options :

1. ✖ Multiple pulse width modulation

2. ✖ Single pulse width modulation

3. ✖ Trail edge modulation

4. ✔ Sinusoidal pulse width modulation

Question Number : 103 Question Id : 3330085983 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A train moving at a speed of 63km/hr enters a railway station and crosses the platform in 20 Sec. If the length of the train is 100m, what is the length of the platform?

Options :

1. ✖ 150m

2. ✖ 200m

3. ✔ 250m

4. ✖ 300m

Question Number : 104 Question Id : 3330085984 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Calculate the velocity of the bottom point of the wheel for perfect rolling using the data: r=20 cm, ω=100 rad/sec.

Options :

1. ✔ 20 m/sec

2. ✖ 40 m/sec

3. ✖ 60 m/sec

4. ✖ 80 m/sec

Question Number : 105 Question Id : 3330085985 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The wheels of a train, engine as well as bogies, are slightly tapered to

Options :

1. ✖ Reduce friction

2. ✖ Increase friction

3. ✖ Facilitate braking

4. ✔ Facilitate in taking turns

Question Number : 106 Question Id : 3330085986 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The value of area under a velocity-time graph is

Options :

1. ✖ Acceleration

2. ✔ Displacement

3. ✖ Force

4. ✖ Momentum

Question Number : 107 Question Id : 3330085987 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which motor is preferred for electric traction purpose?

Options :

1. ✖ 3-phase induction motor

2.

✖ Reluctance motor

3. ✔ DC series motor

4. ✖ DC shunt motor

Question Number : 108 Question Id : 3330085988 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The speed time curve of the urban service has no

Options :

1. ✖ Acceleration period

2. ✖ Braking period

3. ✖ Coasting period

4. ✔ Free-running period

Question Number : 109 Question Id : 3330085989 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Matrix A has x rows and $x + 5$ columns. Matrix B has y rows and $11 - y$ columns. Both AB *and* BA exist, then

Options :

1. ✔ $x = 3 \text{ and } y = 8$

2. ✖ $x = 3 \text{ and } y = 4$

3. ✖ $x = 4 \text{ and } y = 8$

4. ✖ $x = 5 \text{ and } y = 9$

Question Number : 110 Question Id : 3330085990 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rank of matrix $\begin{bmatrix} k & -1 & 0 \\ 0 & k & -1 \\ -1 & 0 & k \end{bmatrix}$ is 2, for k =

Options :

1. ✔ 1

2. ✖ 2

3. ✖ 3

4. ✖ Any row number

Question Number : 111 Question Id : 3330085991 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $A = \begin{bmatrix} 4 & 2 \\ -3 & 3 \end{bmatrix}$ then $A^{-1} =$

Options :

1. ✖ $\frac{1}{6}(7I - A)$

2. ✖ $\frac{1}{4}(5I - A)$

3. ✖ $\frac{1}{3}(7I - A)$

4. ✔ $\frac{1}{18}(7I - A)$

Question Number : 112 Question Id : 3330085992 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The minimum value of the function $x^2 + y^2 + z^2$ if $x + y + z = 3a$

Options :

1. ✖ $3a$

2. ✔ $3a^2$

3. ✖ $3a^3$

4. ✖ $3a^4$

Question Number : 113 Question Id : 3330085993 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Particular integral of the partial differential equation $\frac{\partial^2 z}{\partial x^2} - 2\frac{\partial^2 z}{\partial x \partial y} + \frac{\partial^2 z}{\partial y^2} = 2x\,cosy$ is

Options :

1. ✖ $x\,cosy + 2siny$

2. ✔ $-2(x\,cosy + 2siny)$

3. ✖ $2cosy + xsiny$

4. ✖ $2\,cosy + siny$

Question Number : 114 Question Id : 3330085994 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Integration factor of $\frac{dy}{dx} + 2xy = e^{-x^2}$

Options :

1. ✔ e^{x^2}

2. ✖ e^{-x^2}

3. ✖ x^2

4. ✖ x^{-2}

Question Number : 115 Question Id : 3330085995 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The General solution of $z = px + qy + p^2q^2$ is

Options :

1. ✖ $z = ax + by$

2. ✖ $z = px + qy + a^2b^2$

3. ✖ $z = ax + by + ab$

4. ✔ $z = ax + by + a^2b^2$

Question Number : 116 Question Id : 3330085996 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If div $\bar{F}$ of any vector $\bar{F}$ is Zero, then it is

Options :

1. ✖ Irrotational

2. ✔ Solenoidal

3. ✖ Invariant

4. ✖ Harmonic

Question Number : 117 Question Id : 3330085997 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(z)$ is analytic at z_0 then it is

Options :

1. ✖ Continuous everywhere

2. ✖ Discontinuous everywhere

3. ✔ Continuous at $z = z_0$

4. ✖ Discontinuous at $z = z_0$

Question Number : 118 Question Id : 3330085998 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If x = 4, y = 8, σ_x =2, σ_y= 3 and r=0.3 then the line of regression of y on x is

Options :

1. ✔ y=0.45x+6.2

2. ✖ y=0.55x+4.2

3. ✖ y=-0.45x-6.2

4. ✖ y=0.55x-4.2

Question Number : 119 Question Id : 3330085999 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $P(A) = \frac{7}{11},\ P(B) = \frac{6}{11}$ *and* $P(A \cup B) = \frac{8}{11}$ *then* $P(A|B) = ?$

Options :

1. ✖ 3/5

2. ✖ 2/3

3. ✖ 1/2

4. ✔ 5/6

Question Number : 120 Question Id : 3330086000 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

One of the two events must occur the chance of one is $\frac{2}{3}$ of the other, then odd in favour of the other are

Options :

1. ✖ 2:3

2. ✖ 1:3

3. ✖ 3:1

4. ✔ 3:2