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 :	Electronics and Communication Engineering 19th Oct 2022 Shift 1
Duration :	120
Total Marks :	140
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

Research Methodology

Section Id :	549470387
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	59
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 54947027535 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which is the independent variable in the process of teaching learning?

Options :

1. ✖ Student

2. ✖ Parents

3. ✔ Teacher

Education Institution

4. ✖

Question Number : 2 Question Id : 54947027536 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 the pioneer in the concept of micro-teaching?

Options :

Oxford University

1. ✖

Stanford University

2. ✔

Delhi University

3. ✖

Madras University

4. ✖

Question Number : 3 Question Id : 54947027537 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a student asks a question for which the teacher has no direct, correct answer, he should

Options :

1. ✖ Ask the student to find out the answer himself from the library

2. ✖ Tell the student not to put irrelevant questions

3. ✖ Provide some vague answer to satisfy the student

4. ✔ Tell the student that he would tell correct answer later

Question Number : 4 Question Id : 54947027538 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 appropriate in the context of teacher- student relationship?

Options :

1. ✖ Informal and intimate

Cordial and peaceful

2. ✔

Indifferent

3. ✖

Restricted to classroom dynamic

4. ✖

Question Number : 5 Question Id : 54947027539 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Assertion (A): Formative learning tends to accelerate the process of learning.
Reason (R): As against summative evaluation formative evaluation is highly reliable.
Choose the correct answer from the following code:

Options :

Both (A) and (R) are true, and (R) is not the correct explanation of (A).

1. ✖

Both (A) and (R) are true, and (R) is the correct explanation of (A).

2. ✖

(A) is true, but (R) is false.

3. ✔

(A) is false, but (R) is true.

4. ✖

Question Number : 6 Question Id : 54947027540 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

During which year, Educational T V was introduced in India?

Options :

1971

1. ✖

1961

2. ✖

1968

3. ✔

1978

4. ✖

Question Number : 7 Question Id : 54947027541 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The primary objective of N C T E – is _____

Options :

1. ✔ To maintain standards in education colleges.

2. ✖ To open education colleges.

3. ✖ To provide grant aid to education colleges.

4. ✖ To promote research in education.

Question Number : 8 Question Id : 54947027542 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The quality of research is primarily adjudicated on the basis of

Options :

1. ✔ The rigour with which it was carried out .

2. ✖ The place of publication

The manner in which the action is taken on recommendations.

3. ✖

Quantitative aspects.

4. ✖

Question Number : 9 Question Id : 54947027543 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A research which has explored ideas based on the new facts through the study of the past is called.

Options :

Historical research

1. ✔

Mythological research

2. ✖

Content analysis

3. ✖

Philosophical research

4. ✖

Question Number : 10 Question Id : 54947027544 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 research method?

Options :

1. Historical ✖

2. Survey ✖

3. Philosophical ✖

4. Observation ✔

Question Number : 11 Question Id : 54947027545 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____is not required in experimental researches.

Options :

1. Manipulation ✖

Controlling

2. ✖

Content analysis

3. ✔

Observation

4. ✖

Question Number : 12 Question Id : 54947027546 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, a satisfactory statistical quantitative method should not possess?

Options :

Measurability

1. ✖

Flexibility

2. ✔

Appropriateness

3. ✖

Comparability

4. ✖

Question Number : 13 Question Id : 54947027547 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 specifically related to a research design?

A. Designing Hypothesis

B. Choice of field inquiry

C. Sample selection

D. Formulation of plan

E. Deciding the tools to be employed in data collection

Options :

B, C, and D

1. ✖

A, B, and C

2. ✖

C, D, and E

3. ✔

B, D and E

4. ✖

Question Number : 14 Question Id : 54947027548 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The acronym SPSS stands for:

Options :

Software Package for Social Sciences

1. ✖

Statistical Package for Social Sciences

2. ✔

Statistical Package for Studies in sociology

3. ✖

Statistical Package for social studies

4. ✖

Is Section Default? : null

Question Id : 54947027549 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 21)

Read the following passage carefully and answer the questions from 15 to 21:

For the mobility-impaired, highly trained canines called 'service dogs' can pick up dropped keys, open and close drawers, retrieve prepared meals, help a person in and out of bathtub, dial 911, push and pull wheelchairs, help operate a car or van and pull off gloves, shoes, socks and jackets. Other dogs provide specific assistance to those who suffer seizures (sudden attacks of illness) and require special medication. And, of course, the helping dogs provide companionship, play and give unconditional love to the people they assist. It is thirty odd years now since the placement of the first assistance dog. But only in recent years, with the rising independent movement among disabled people has the idea begun to sored widely. While most service-dogs are trained to work with people who rely on wheelchairs, other categories of helping dogs include hearing –dogs who alert their owners to sounds, such as doorbells, phones, cooking times, alarm clocks, smoke alarms and seizure dogs which carry medication in their packs and are trained to dial 911 on large keypad phones.

Sub questions

Question Number : 15 Question Id : 54947027550 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which kind of dogs, alerts their owners to sounds, such as doorbells and phones?

Options :

1. ✖ Service dogs

2. ✖ Canines

3. ✖ Siezure dogs

4. ✔ Hearing dogs

Question Number : 16 Question Id : 54947027551 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The service-dogs are

Options :

1. ✖ Paid highly

2. ✖ Less in number

3. ✔ Multiple taskers

Employees

4. ✖

Question Number : 17 Question Id : 54947027552 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The idea of assistance dogs became popular due to

Options :

Independent movement among the disabled

1. ✔

awareness in hospitals

2. ✖

Independence of the country

3. ✖

Both independent movement among the disabled and awareness in hospitals

4. ✖

Question Number : 18 Question Id : 54947027553 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The categorie of helping –dogs is

Options :

1. ✖ domestic, service and seizure dogs

2. ✔ service, hearing and seizure dogs

3. ✖ hunting and domestic dogs

4. ✖ hearing and domestic dogs

Question Number : 19 Question Id : 54947027554 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The passage makes a distinct difference between

Options :

1. ✔ service and helping dogs

service dogs and canines

2. ✖

canines and ordinary dogs

3. ✖

Both service dogs and canines and canines and ordinary dogs

4. ✖

Question Number : 20 Question Id : 54947027555 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

State the noun form of ‘ trained’

Options :

train

1. ✖

trainer

2. ✖

training

3. ✔

trainee

4. ✖

Question Number : 21 Question Id : 54947027556 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which dogs are trained to work with people who rely on wheelchairs?

Options :

Hearing dogs

1. ✖

Siezure dogs

2. ✖

Service dogs

3. ✔

Street dogs

4. ✖

Is Section Default? : null

Question Number : 22 Question Id : 54947027557 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 Berol's Linear Model of communication?

Options :

1. ✖ S-M-R-C

2. ✖ S-R-M-C

3. ✔ S-M-C-R

4. ✖ S-R-C-M

Question Number : 23 Question Id : 54947027558 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Communication which has no beginning or end is known as_____

Options :

1. ✔ Process

2. ✖ Meditation

Interaction

3. ✖

Transaction

4. ✖

Question Number : 24 Question Id : 54947027559 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 does not contribute to effective communication?

Options :

Adequate medium

1. ✖

Clarity in language

2. ✖

Listen poorly

3. ✔

Home communication skill

4. ✖

Question Number : 25 Question Id : 54947027560 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____An example of channel communication.

Options :

1. ✔ Face – to – face conversation

2. ✖ Noise

3. ✖ Feedback

4. ✖ Context

Question Number : 26 Question Id : 54947027561 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Among the following, which indicates the problem arising from expression?

Options :

1. ✖ Wrong assumption

Cultural barriers

2. ✖

Selecting perception

3. ✖

Semantic problems

4. ✔

Question Number : 27 Question Id : 54947027562 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In India, _____ is not the concern for mass media.

Options :

Privacy

1. ✖

Manipulation

2. ✖

Integration of society

3. ✔

Security

4. ✖

Question Number : 28 Question Id : 54947027563 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

2, 9, 28, 65, 126, 217, 344,_____

Options :

361

1. ✖

362

2. ✖

369

3. ✖

513

4. ✔

Question Number : 29 Question Id : 54947027564 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

B, D, G, I, L, N_____

Options :

1. ✖ N

2. ✖ O

3. ✔ Q

4. ✖ P

Question Number : 30 Question Id : 54947027565 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When "PAT" is coded as "QRBCUV", then how will you code "GRACE"?

Options :

1. ✖ HISTBCDEGF

2. ✔ HISTBCDEFG

3. ✖ HISBTCDEFG

HISTBCEDFG

4. ✖

Question Number : 31 Question Id : 54947027566 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

E is the son of A; D is the son of B; E is married to C; C is the daughter of B. How is D related to E?

Options :

Brother

1. ✖

Uncle

2. ✖

Brother-in-law

3. ✔

Father-in-law

4. ✖

Question Number : 32 Question Id : 54947027567 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$1/5^{th}$ of Eiffel tower is painted with bronze, $1/4^{th}$ maroon and the rest, golden. If the height of golden-colored part is 450m, what is the height of Eiffel tower?

Options :

1. ✖ 2,250m

2. ✔ 750m

3. ✖ 1000m

4. ✖ 1,250m

Question Number : 33 Question Id : 54947027568 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pankaj from the home with a speed of 30km/h, reaches the school late by 20 minutes. Next day by increasing the speed by 15km/h, reached the school late by 8 minutes. How far is the school from home?

Options :

1. ✖ 35 km

18 km

2. ✔

20km

3. ✖

27km

4. ✖

Question Number : 34 Question Id : 54947027569 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 30 men carry out a piece of work in 27 days, how many days is required for 18 men to perform another piece of work, which is 3 times bigger

Options :

135 days

1. ✔

120 days

2. ✖

150 days

3. ✖

180 days

4. ✖

Question Number : 35 Question Id : 54947027570 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If two liters of water is evaporated by boiling 8 liters of sugar solution with 5% sugar, findout the percentage of sugar in the remaining solution?

Options :

8%

1. ✖

$6\frac{2}{3}\%$

2. ✔

9%

3. ✖

10%

4. ✖

Question Number : 36 Question Id : 54947027571 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A reasoning started with a particular statement and concluded with a universal statement is known as_____

Options :

Deductive reasoning

1. ✖

Transcendental reasoning

2. ✖

Inductive reasoning

3. ✔

Abnormal reasoning

4. ✖

Question Number : 37 Question Id : 54947027572 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 an argument?

Options :

Devadutt does not eat during day, so he must be eating at night.

1. ✖

Devadutt eats in the night, so he does not eat during the day

2. ✖

If Devadutt is growing fat and if he does not eat during the day, he will be eating at night.

3. ✔

Since Devadutt does not eat in the day, he must be eating in the night.

4. ✖

Question Number : 38 Question Id : 54947027573 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two propositions with the same subject and predicate terms, but different in quality are termed as:

Options :

Contrary

1. ✖

Subaltern

2. ✖

Subalternation

3. ✖

Contradictory

4. ✔

Question Number : 39 Question Id : 54947027574 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Inductive reasoning presupposes_____

Options :

God created the world

1. ✖

Uniformity of nature

2. ✖

Law of the nature

3. ✖

Unity of nature.

4. ✔

Question Number : 40 Question Id : 54947027575 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Venn diagram is a kind of diagram to

Options :

1. ✖ Represent but not assess the validity of elementary inferences of syllogistic form.

2. ✔ Represent and assess the validity of elementary inferences of syllogistic form.

3. ✖ Represent and assess the truth of elementary inferences of syllogistic form.

4. ✖ Assess but not represent the truth of elementary inferences of syllogistic form.

Question Number : 41 Question Id : 54947027576 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Indian school of logic uses _____pramana to prove the existence of God.

Options :

1. ✖ Arthapatti

2. ✔ Anumana

Upamana

3. ✖

Pratyaksha

4. ✖

Question Number : 42 Question Id : 54947027577 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ Concept of Indian logic system denotes circumstantial implication.

Options :

Upamana

1. ✖

Anupalabdi

2. ✖

Pratyaksa

3. ✖

Arthapatti

4. ✔

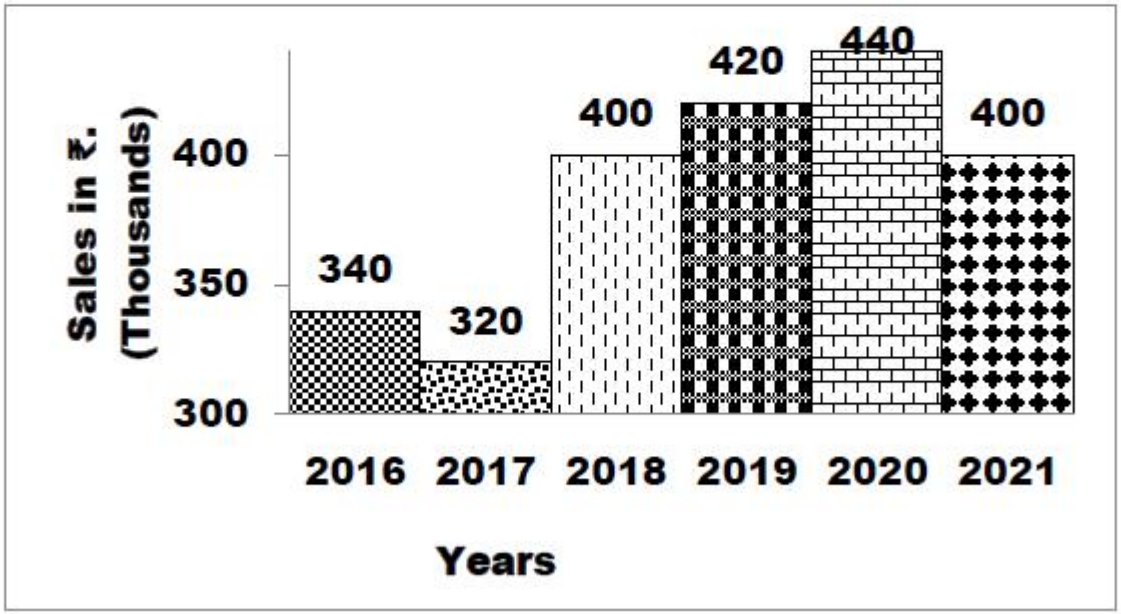
Is Section Default? : null

Question Id : 54947027578 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (43 to 45)

Note:

Study the following bar chart carefully and answer the questions 43 to 45. It gives sales (in thousands) of a product over years 2016 - 2021.



Sub questions

Question Number : 43 Question Id : 54947027579 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What are the average sales for the period 2018 to 2021?

Options :

1. ✖ 425

2. ✖ 430

3. ✖ 420

4. ✔ 415

Question Number : 44 Question Id : 54947027580 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sales of 2017 are _____times of sales 2018.

Options :

1. ✖ 1.25

2. ✔ 0.8

3. ✖ 8.25

8

4. ✖

Question Number : 45 Question Id : 54947027581 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the percentage of increase over the previous year is the least?

Options :

2016

1. ✖

2020

2. ✔

2018

3. ✖

2019

4. ✖

Is Section Default? : null

Question Id : 54947027582 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (46 to 49)

Note:

Study the following table carefully and answer the questions from 46 to 49. It consists of data on marks obtained by various candidates in different subjects

Students	Subjects (Max Marks)					
	Maths (150)	Chemistry (130)	Physics (120)	Geography (100)	History (100)	Comp Science (100)
Ayush	90	50	90	60	70	80
Aman	100	80	80	40	80	70
Sajal	90	60	70	70	90	70
Rohit	80	65	80	80	60	60
Muskan	80	65	85	95	50	90
Tanvi	70	75	65	85	40	60
Tarun	65	35	50	77	80	80

Sub questions

Question Number : 46 Question Id : 54947027583 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who among the following has obtained the highest aggregate marks?

Options :

Ayush

1. ✖

Aman

2. ✖

Sajal

3. ✖

Muskan

4. ✔

Question Number : 47 Question Id : 54947027584 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 of marks obtained by all candidates in Physics?

Options :

62.85

1. ✖

74.28

2. ✔

78.52

3. ✖

4. ✖ No answer

Question Number : 48 Question Id : 54947027585 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 of marks obtained by Aman for all subjects?

Options :

1. ✖ 72

2. ✔ 75

3. ✖ 80

4. ✖ 85

Question Number : 49 Question Id : 54947027586 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 approximate percentage of marks obtained by Ayush?

Options :

1. ✖ 72

2. ✔ 73

3. ✖ 75

4. ✖ 78

Is Section Default? : null

Question Number : 50 Question Id : 54947027587 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 employs asynchronous communication?

A) Video conferencing

B) Email

C) Forums

D) Instant messaging

Choose the correct option.

Options :

A and C

1. ✖

B and D

2. ✖

B and C

3. ✔

A and D

4. ✖

Question Number : 51 Question Id : 54947027588 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Read the following two statements:

A) ICT is considered a subset of IT.

B) The "right to use" a piece of software is termed as copyright.

Which of the above statements(s) is/are correct?

Options :

Neither (A) nor (B)

1. ✔

Both (A) and (B)

2. ✖

(B) only

3. ✖

(A) only

4. ✖

Question Number : 52 Question Id : 54947027589 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 be taken the digital library for education?

Options :

Swayam

1. ✖

MOOC

2. ✖

Sakshat

3. ✖

NPTEL

4. ✔

Question Number : 53 Question Id : 54947027590 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 lists computer memory sequentially from highest to lowest speed?

Options :

1. ✖ Secondary storage; Main Memory (RAM); Cache Memory; CPU Registers

2. ✖ CPU Registers; Cache Memory; Secondary storage; Main Memory (RAM)

3. ✖ Cache Memory; CPU Registers; Main Memory (RAM); Secondary Storage

4. ✔ CPU Registers; Cache Memory; Main Memory (RAM); Secondary Storage

Question Number : 54 Question Id : 54947027591 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Each computer connected to the internet should

Options :

Be an IBM PC

1. ✖

Have a unique IP address

2. ✔

Have a modern connection

3. ✖

Be internet compatible

4. ✖

Question Number : 55 Question Id : 54947027592 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 exact format of Email address?

Options :

name@website.info

1. ✔

name@website@info

2. ✖

www.nameofebsite.com

3. ✖

name.website.com

4. ✖

Question Number : 56 Question Id : 54947027593 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ is the oldest soap opera telecasted in India.

Options :

Kahani Ghar Ghar Ki

1. ✖

Buniyaad

2. ✖

Kyunki Saas Bhi Kabhi Bahu Thee

3. ✖

Hum Log

4. ✔

Question Number : 57 Question Id : 54947027594 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Indicate the name of the research station established for conducting research at Antarctica by Government of India

Options :

1. ✖ Yamunotri

2. ✖ UttariGangotri

3. ✔ DakshinGangotri

4. ✖ None of these.

Question Number : 58 Question Id : 54947027595 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 are priority areas related to the sustainable development Goals?

i. No poverty

ii. Peace, Justice and strong institutions

iii. Zero hunger

iv. Reducing urbanization

Choose the correct answer from the options given below.

Options :

1. (i) , (iii), (iv) ✖

2. (ii), (iii), (iv) ✖

3. (i), (ii), (iv) ✖

4. (i), (ii), (iii) ✔

Question Number : 59 Question Id : 54947027596 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The common feature between NO_2, SO_2, CO and SPM is _____

Options :

Are greenhouse gases

1. ✖

Are classified as secondary pollutants

2. ✖

Are classified as primary pollutants

3. ✔

Have equal role in causing acid rain

4. ✖

Question Number : 60 Question Id : 54947027597 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Given below are an assertion and a reason:

Assertion (A):

Methaemoglobinaemia is a condition wherein blood is unable to carry and deliver enough oxygen to the body.

Reason (R):

Consumption of drinking water with high nitrate level may lead to Methaemoglobinaemia.

Choose the correct answer from the options given below:

Options :

1. ✖ Both (A) and (R) are true but (R) is not the correct explanation of (A).

2. ✔ Both (A) and (R) are true and (R) is the correct explanation of (A).

3. ✖ (A) is true, but (R) is false

4. ✖ (A) is false, but (R) is true.

Question Number : 61 Question Id : 54947027598 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 gases has the highest global warming potential?

Options :

Carbon dioxide

1. ✖

Sulphfur hexafluoride

2. ✔

Chlorofluorocarbon

3. ✖

Methane

4. ✖

Question Number : 62 Question Id : 54947027599 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 percentage occurrence of earthquakes at plate boundaries?

Options :

90

1. ✔

2. ✖ 50

3. ✖ 80

4. ✖ 75

Question Number : 63 Question Id : 54947027600 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, India Government has announced the National Action plan on Climate Change?

Options :

1. ✖ 2005

2. ✖ 2009

3. ✔ 2008

4. ✖ 2012

Question Number : 64 Question Id : 54947027601 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Radhakrishnan Commission, opined that the aim of Higher Education should be _____

Options :

1. ✖ To inculcate values Peace and harmony.

2. ✖ To develop great personalities who can contribute to politics, administration, industry and commerce

3. ✖ To impart traditional education to students.

4. ✔ To inculcate values Peace and harmony, and also develop great personalities who can contribute to politics, administration, industry and commerce

Question Number : 65 Question Id : 54947027602 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Value education makes a student.

Options :

Successful businessman

1. ✖

Good teacher

2. ✖

Able manager

3. ✖

Good citizen.

4. ✔

Question Number : 66 Question Id : 54947027603 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Among the appointees of the Governor, _____can be removed by the President of India only?

Options :

Vice-Chancellor of a State University

1. ✖

Advocate-General

2. ✖

A member of the State Public Service Commission

3. ✔

Chief Minister of a State.

4. ✖

Question Number : 67 Question Id : 54947027604 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Where and when was the Second Buddhist Council held?

Options :

Sri Lanka in the first century BCE

1. ✖

Vaishali in 383 BCE

2. ✔

Pataliputra in 250 BCE

3. ✖

Mandalay in 1871 CE

4. ✖

Question Number : 68 Question Id : 54947027605 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which of the following year, the Universities in the presidency towns were established in India?

Options :

1. ✖ 1858

2. ✔ 1857

3. ✖ 1900

4. ✖ 1909

Question Number : 69 Question Id : 54947027606 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to National Educational Policy, 2020, the Gross Enrolment Ratio in higher education would increased to_____ percent by 2035.

Options :

1. ✖ 40

2. ✔ 50

3. ✖ 60

4. ✖ 70

Question Number : 70 Question Id : 54947027607 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which of the following states, 50th Central University was established?

Options :

1. ✖ Tamil Nadu

2. ✔ Telangana

3. ✖ Tripura

4. ✖ Andhra Pradesh.

Electronics and Communication Engineering

Section Id :	549470388
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	70
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 71 Question Id : 54947027608 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The partial differential equation $f_{xx} + f_{yy} = 0$ is elliptic if _____

Options :

1. ✔ $y > 0$

2. ✖ $y < 0$

3. ✖ $y = 0$

4. ✖ $y \leq 0$

Question Number : 72 Question Id : 54947027609 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The probability density function $f(x)$ of a continuous random variable x is defined by

$$f(x)=\begin{cases}\frac{A}{x^3}, 5\le x\le 10\\ 0, \text{ elsewhere}\end{cases}$$, then the value of A is _____

Options :

1. ✖ 50

2. ✖ $\frac{1}{3}$

3. ✖ -200

4. ✔ $\frac{200}{3}$

Question Number : 73 Question Id : 54947027610 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If r, s be two real numbers and $A=\begin{bmatrix}1 & 2 & 0\\ 2 & 0 & 3\\ r & s & 0\end{bmatrix}$ and $B=\begin{bmatrix}1\\ 1\\ s-1\end{bmatrix}$ then the system of linear equation $AX=B$ has

Options :

1. ✖ No solution for $s \neq 2r$

2. ✔ Infinitely many solutions for $s = 2r = 2$

3. ✖ A unique solution for $s = 2r = 2$

4. ✖ Infinitely many solutions for $s = 2r \neq 2$

Question Number : 74 Question Id : 54947027611 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For $0 \leq t < \infty$, the maximum value of the function $f(t) = e^{-t} - 2e^{-2t}$ occurs at

Options :

1. ✔ $t = \log_e 4$

2. ✖ $t = 0$

3. ✖ $t = \log_e 2$

4. ✖ $t = \log_e 8$

Question Number : 75 Question Id : 54947027612 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

By Taylor's series method, the value of $y(1.1)$ is _____, given that $y' = x + y, y(1) = 0, h = 0.1$.

Options :

1. ✖ 0.005

2. ✖ 0.001

3. ✖ 0.101

4. ✔ 0.11

Question Number : 76 Question Id : 54947027613 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The relation $|3 - z| + |3 + z| = 5$ represents_____.

Options :

1. ✖ a circle

2. ✖ a parabola

3. ✔ an ellipse

4. ✖ a hyperbola

Question Number : 77 Question Id : 54947027614 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Let a causal LTI system be governed by the following differential equation $y(t) + \frac{1}{8}\frac{dy}{dt} = 2\,x(t)$ where, x(t) and y(t) are the input and the output. It's impulse response is

Options :

1. ✖ $8\ e^{-8t}\ u(t)$

2. ✔ $16\ e^{-8t}\ u(t)$

3. ✖ $8e^{-1/8t}\ u(t)$

4. ✖ $16\ e^{-1/8t}\ u(t)$

Question Number : 78 Question Id : 54947027615 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The discrete time Fourier transform (DTFT) of the given signal $x[n] = \alpha^n u(n)$, $\alpha < 1$ is

Options :

1. ✔ $\frac{1}{1 - \alpha e^{-j\omega}}$

2. ✖ $\frac{1}{1-\alpha e^{j\omega}}$

3. ✖ $\frac{\alpha}{1-\alpha e^{-j\omega}}$

4. ✖ $\frac{\alpha}{1-\alpha e^{j\omega}}$

Question Number : 79 Question Id : 54947027616 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Fourier series of a periodic signal x(t) with period T will not converge if

Options :

1. ✖ x(t) is not a band-limited signal

2. ✖ x(t) has more than one maxima in one period T

3. ✔ |x(t)| is not finite at all values of t

4. ✖ x(t) is not continuous at all points

Question Number : 80 Question Id : 54947027617 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The resistances R_A, R_B and R_C have been connected in a STAR fashion with R_A connected between a point A and a common point, R_B connected between a point B and a common point and R_C connected between a point C and a common point. The equivalent DELTA resistance R_{AB} between points A and B is given by

Options :

1. $R_A + R_B + \frac{R_A R_B}{R_C}$ ✔

2. $\frac{R_A R_B}{R_A + R_B + R_C}$ ✖

3. $R_B + R_C + \frac{R_B R_C}{R_A}$ ✖

4. $\frac{R_A R_C}{R_A + R_B + R_C}$ ✖

Question Number : 81 Question Id : 54947027618 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A LTI discrete-time system is given by the difference equation $y(n) - ay(n-1) = x(n)$ where $|a| < 1$, if all the initial conditions are zero then the system is

Options :

1. ✔ stable

2. ✖ undamped and oscillatory

3. ✖ critically stable

4. ✖ unstable

Question Number : 82 Question Id : 54947027619 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A periodic signal x(t) with a fundamental period "T" can be expanded as Fourier series only if

Options :

1. ✖ $|x(t)| < \infty$ only at a finite number of values of 't' with in a period "T"

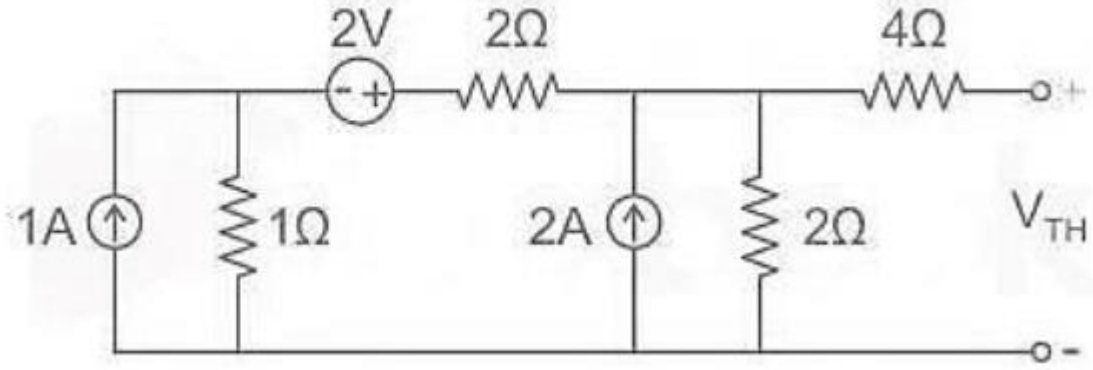
2. ✔ $\int_{-T/2}^{T/2} |x(t)|\, dt < \infty$

3. ✖ x(t) has half-wave symmetry

4. ✖ x(t) has either even or odd symmetry

Question Number : 83 Question Id : 54947027620 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the circuit shown below, the Thevenin voltage V_{TH} is (in volts)



Options :

1. ✖ 2.4

2. ✖ 2.6

3. ✔ 3.6

4. ✖ 4.5

Question Number : 84 Question Id : 54947027621 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A signal x(t) consists of the sum of two sinusoids, one at a frequency of 600 Hz and the other at a frequency of 400 Hz. What should be the sampling rate of the signal x(t) so that the discrete-time signal has a sinusoid of only one frequency?

Options :

1. ✖ 500 Hz

2. ✖ 600 Hz

3. ✔ 1000 Hz

4. ✖ 1200 Hz

Question Number : 85 Question Id : 54947027622 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider an n-channel metal-oxide-semiconductor field-effect transistor (MOSFET) with a gate-to-source voltage of 1.8 V. Assume that W/L=4, $\mu_n C_{ox} = 70 \times 10^{-6}\ AV^{-2}$, the threshold voltage is 0.3 V, and the channel length modulation parameter is 0.09 V^{-1}. In the saturation region, the drain conductance (in micro seimens) is _____.

Options :

1. ✖ 56

2. ✖ 42

3. ✔ 28

4. ✖ 34

Question Number : 86 Question Id : 54947027623 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider an n-channel MOSFET having width W, length L, electron mobility in the channel μ_n and oxide capacitance per unit area Cox. If gate-to-source voltage V_{GS}=0.7 V, drain-to source voltage V_{DS} = 0.1V, $(\mu_n C_{ox})$ = 100μA/V^2, threshold voltage V_{TH} = 0.3 V and (W/L) = 50, then the transconductance g_m (in mA/V) is _____.

Options :

1. ✔ 0.5

2. ✖ 1

3. ✖ 1.5

4. ✖ 2

Question Number : 87 Question Id : 54947027624 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The V_T is expressed as

Options :

1. ✔ KT / q

2. ✖ q / KT

3. ✖ KTq

4. ✖ nKTq

Question Number : 88 Question Id : 54947027625 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Drift current in a semiconductor depends on

Options :

1. ✖ the applied electric field only

2. ✖ concentration gradient only

3. ✖ both electric field and concentration gradient

4. ✔ both electric field and carrier concentration

Question Number : 89 Question Id : 54947027626 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sensitivity of a photodiode depends upon

Options :

1. ✔ light intensity and depletion region width

2. ✖ depletion region width and excess carrier life time

3. ✖ excess carrier life time and forward bias current

4. ✖ forward bias current and light intensity

Question Number : 90 Question Id : 54947027627 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A LED is basically a _____ P-N junction

Options :

1. ✔ forward-biased

2. ✖ reverse-biased

3. ✖ lightly-doped

4. ✖ heavily-doped

Question Number : 91 Question Id : 54947027628 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For values of drain voltage smaller than gate voltage, a MOSFET acts as a voltage controlled

Options :

1. ✖ current source

2. ✔ resistor

3. ✖ voltage source

4. ✖ capacitor

Question Number : 92 Question Id : 54947027629 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Level shifter circuits are also known as

Options :

1. ✖ attenuator circuits

2. ✖ clipper circuits

3. ✔ clamper circuits

4. ✖ ringing circuits

Question Number : 93 Question Id : 54947027630 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following circuit is most suitable as an oscillator at a frequency of 100 Hz?

Options :

1. ✖ Hartley oscillator

2. ✖ Colpitts oscillator

3. ✖ Crystal oscillator

4. ✔ Wien bridge oscillator

Question Number : 94 Question Id : 54947027631 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A differential amplifier has a differential gain of 20,000 and CMRR = 80dB. The common mode gain is given by

Options :

1. ✔ 2

2. ✖ 1

3. ✖ 1/2

4. ✖ 0

Question Number : 95 Question Id : 54947027632 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Limiting and slicing operations are performed by

Options :

1. ✔ Clipping circuit

2. ✖ Clamping circuit

3. ✖ Ringing circuit

4. ✖ Compensated attenuator

Question Number : 96 Question Id : 54947027633 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The channel length modulation in a CS MOSFET amplifier affects the

Options :

1. ✔ output impedance

2. ✖ input impedance

3. ✖ current gain

4. ✖ power gain

Question Number : 97 Question Id : 54947027634 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the temperature at which a diode current is 2mA for a diode which has reverse saturation current of 10^{-9} A. The Ideality factor is 1.4 and the applied voltage is 0.6V forward bias.

Options :

1. ✔ 69.65°C

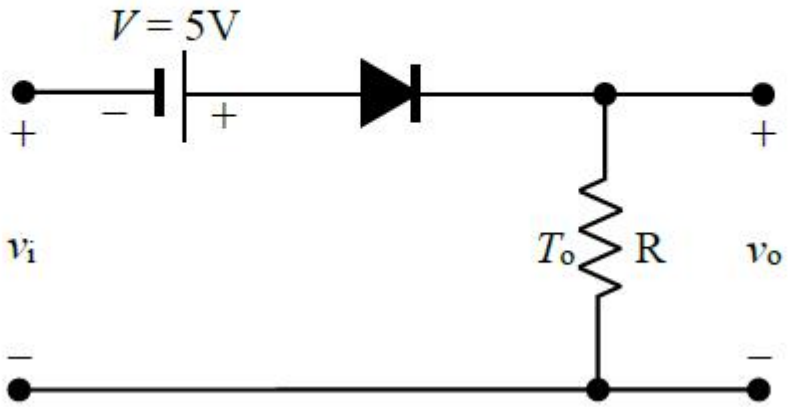
2. ✖ 52.26°C

3. ✖ 25.23°C

4. ✖ 70.23°C

Question Number : 98 Question Id : 54947027635 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a sinusoidal input of 20 V_{peak} to the given circuit, what is the peak value of the output waveform?



Options :

1. ✖ 20 V

2. ✔ 25 V

3. ✖ 0 V

4. ✖ −25 V

Question Number : 99 Question Id : 54947027636 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Frequency of oscillation for three section RC phase shift network is given by _____

Options :

1. ✖ $1/(\pi\sqrt{6}\,RC)$

2. ✖ $2/(\pi\sqrt{6}\,RC)$

3. ✔ $1/(2\pi\sqrt{6}\,RC)$

4. ✖ $1/(2\sqrt{6}\,RC)$

Question Number : 100 Question Id : 54947027637 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the incorrect statement about active and passive filters.

Options :

1. ✖ Gain is not attenuated in active filter

2. ✔ Passive filters are less expensive

3. ✖ Active filter does not cause loading of source

4. ✖ Passive filters are difficult to tune or adjust

Question Number : 101 Question Id : 54947027638 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In case of XOR/XNOR simplification we have to look for the following _____

Options :

1. ✖ Diagonal adjacencies

2. ✖ Offset adjacencies

3. ✖ Straight adjacencies

4. ✔ Both diagonal and offset adjacencies

Question Number : 102 Question Id : 54947027639 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A NAND based S'-R' latch can be converted into S-R latch by placing _____

Options :

1. ✖ A D latch at each of its input

2. ✖ An inverter at each of its input

3. ✖ It can never be converted

4. ✔ Both a D latch and an inverter at its input

Question Number : 103 Question Id : 54947027640 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A serial in/parallel out, 4-bit shift register initially contains all 1s. The data nibble 0111 is waiting to enter. After four clock pulses, the register contains _____

Options :

1. ✖ 0000

2. ✖ 1111

3. ✔ 0111

4. ✖ 1000

Question Number : 104 Question Id : 54947027641 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The simplified form of the Boolean expression $(X + \bar{Y} + Z)\,(X + \bar{Y} + \bar{Z})\,(X + Y + Z)$ is

Options :

1. ✖ $\bar{X}Y + Z$

2. ✖ $XY + \bar{Z}$

3. ✖ $\bar{X}Y + \bar{Z}$

4. ✔ $X + \bar{Y}Z$

Question Number : 105 Question Id : 54947027642 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The decimal equivalent of 10111.1100 is _____.

Options :

1. ✖ 22.3

2. ✔ 23.75

3. ✖ 24.3

4. ✖ 25.75

Question Number : 106 Question Id : 54947027643 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The minimum number of NAND gates required to implement the Boolean function $A+A\overline{B}+A\overline{B}C$ is equal to

Options :

1. ✔ Zero

2. ✖ One

3. ✖ Four

4. ✖ Seven

Question Number : 107 Question Id : 54947027644 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 ADC has the maximum conversion speed?

Options :

1. ✖ Counter type ADC

2. ✖ Dual slope ADC

3. ✖ Digital ramp ADC

4. ✔ Successive approximation ADC

Question Number : 108 Question Id : 54947027645 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An 8085 microprocessor based system uses a 4K × 8-bit RAM whose starting address is AA00H. The address of last byte in this RAM is

Options :

1. ✖ 0FFFH

2. ✖ 1000H

3. ✔ B9FFH

4. ✖ BA00H

Question Number : 109 Question Id : 54947027646 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 control system is given by $s(s + 4)(s^2 + 2s + 1) + k(s + 1) = 0$. What are the angles of the asymptotes for the root loci?

Options :

1. ✖ 0°, 180°, 300°

2. ✖ 0°, 120°, 240°

3. ✔ 60°, 180°, 300°

4. ✖ 120°, 180°, 240°

Question Number : 110 Question Id : 54947027647 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If root loci plots of a particular control system do not intersect the imaginary axis at any point, then the gain margin of the system will be:

Options :

1. ✖ 0

2. ✖ 0.707

3. ✖ 1

4. ✔ Infinite

Question Number : 111 Question Id : 54947027648 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The transfer function of the system described by $\frac{d^2y}{dt^2} + \frac{dy}{dt} = \frac{du}{dt} + 2u$ with 'u' as input and 'y' as output is

Options :

1. ✔ $\frac{(s+2)}{(s^2+s)}$

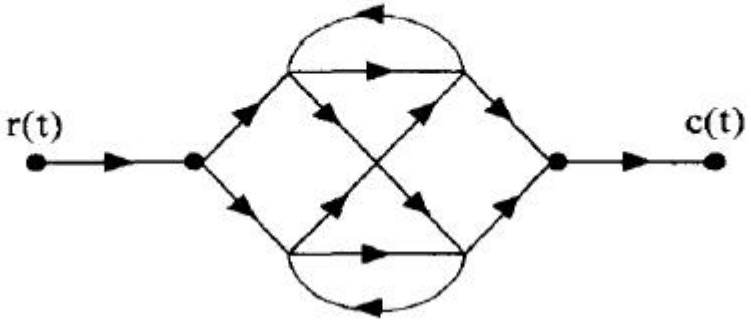
2. ✖ $\frac{(s+1)}{(s^2+s)}$

3. ✖ $\frac{2}{(s^2+s)}$

4. ✖ $\frac{2s}{(s^2+s)}$

Question Number : 112 Question Id : 54947027649 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A signal flow graph is shown in the given figure. The number of forward paths M and the number of individual loops P for this signal flow graph would be



Options :

1. ✔ M = 6 and P = 3

2. ✖ M = 4 and P = 6

3. ✖ M = 4 and P = 3

4. ✖ M = 6 and P = 6

Question Number : 113 Question Id : 54947027650 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The root locus plot of the system having the loop transfer function

$$G(s)\,H(s) = \frac{K}{s(s+4)(s^2+4s+5)}$$ has

Options :

1. ✖ no breakaway point

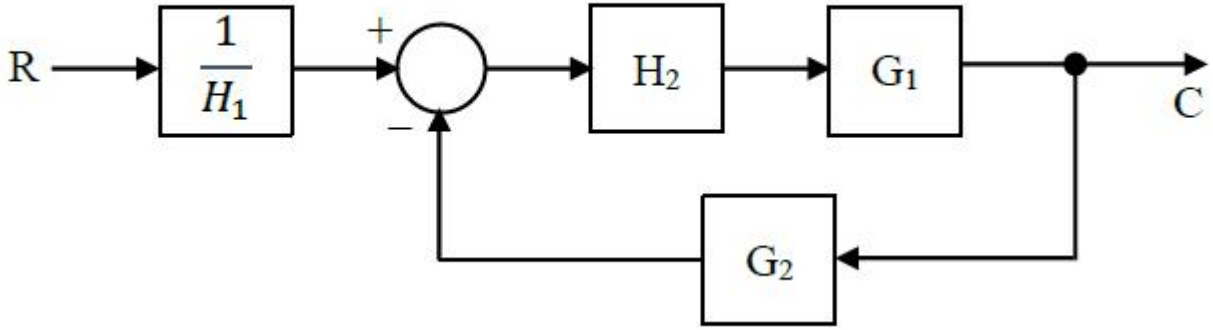
2. ✔ three real breakaway points

3. ✖ only one breakaway point

4. ✖ one real and two complex breakaway points

Question Number : 114 Question Id : 54947027651 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The transfer function C/R of the system shown below is



Options :

1. ✔ $\frac{G_1H_2}{H_1(1+G_1G_2H_2)}$

2. ✖ $\frac{G_1G_2H_2}{H_1(1+G_1G_2H_2)}$

3. ✖ $\frac{G_2H_2}{H_1(1+G_1G_2H_1)}$

4. ✖ $\frac{G_2H_1}{H_2(1+G_1G_2H_2)}$

Question Number : 115 Question Id : 54947027652 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The transfer function of a linear time invariant system is given as

$$G(s) = \frac{1}{s^2+3s+2}$$

The steady state value of the output of the system for a unit impulse input applied at time instant t = 1 will be

Options :

1. ✔ 0

2. ✖ 0.5

3. ✖ 1

4. ✖ 2

Question Number : 116 Question Id : 54947027653 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The state variable description of an LTI system is given by

$$\begin{pmatrix} \dot{x}_1 \\ \dot{x}_2 \\ \dot{x}_3 \end{pmatrix} = \begin{pmatrix} 0 & a_1 & 0 \\ 0 & 0 & a_2 \\ a_3 & 0 & 0 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} + \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix} u$$

$$y = (1\ 0\ 0) \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix}$$

where y is the output and u is the input. The system is controllable for

Options :

1. ✖ $a_1 \neq 0,\ a_2 = 0,\ a_3 \neq 0$

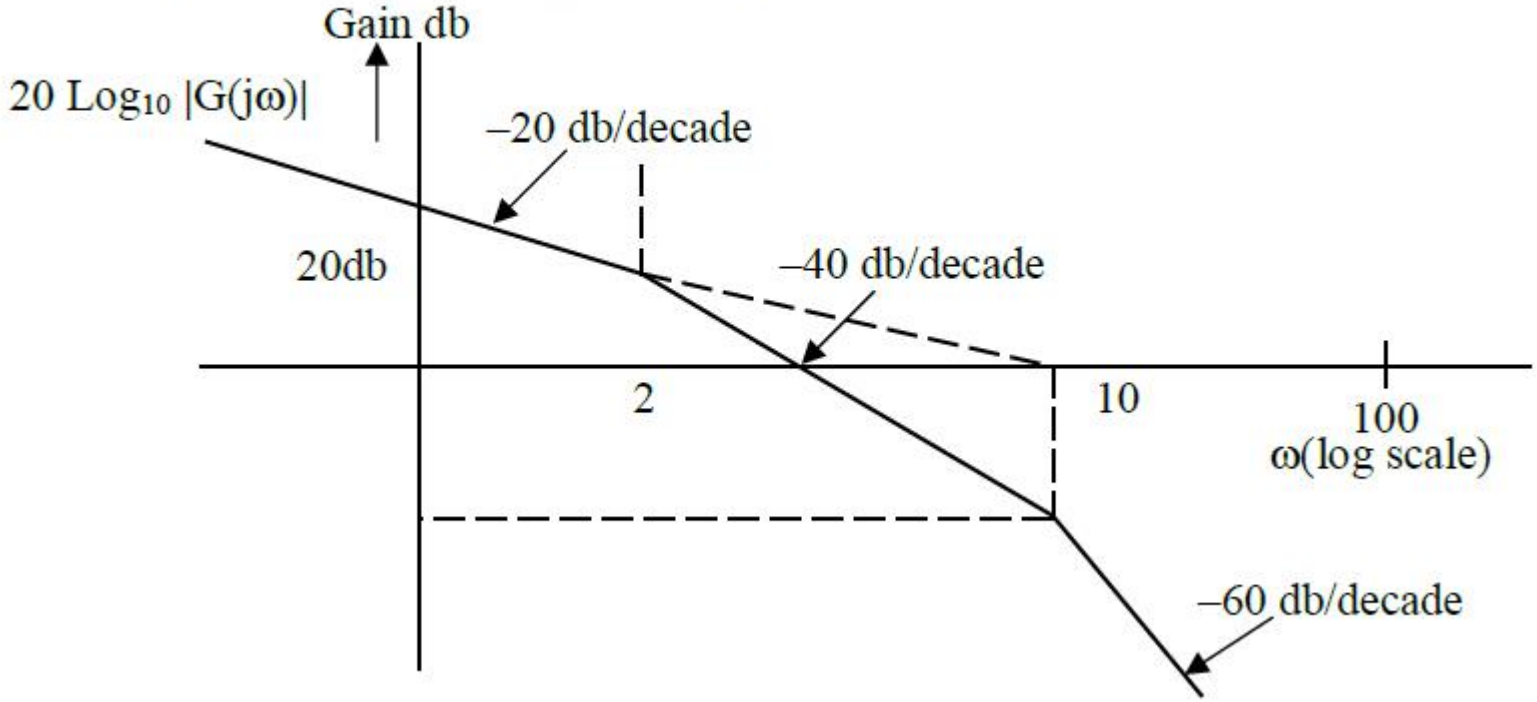
2. ✖ $a_1 = 0,\ a_2 \neq 0,\ a_3 \neq 0$

3. ✖ $a_1 = 0,\ a_2 \neq 0,\ a_3 = 0$

4. ✔ $a_1 \neq 0,\ a_2 \neq 0,\ a_3 = 0$

Question Number : 117 Question Id : 54947027654 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Bode plot shown in the figure has G(jω) as



Options :

1. ✖ $\frac{100}{j\omega(1+j0.5\omega)(1+j0.1\omega)}$

2. ✖ $\frac{100}{j\omega(2+j\omega)(10+j\omega)}$

3. ✖ $\frac{10}{j\omega(1+2j\omega)(1+10j\omega)}$

4. ✔ $\frac{10}{j\omega(1+0.5j\omega)(1+0.1j\omega)}$

Question Number : 118 Question Id : 54947027655 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The power spectral density of white noise is _____ throughout the frequency spectrum.

Options :

1. ✖ Multidirectional

2. ✖ Unidirectional

3. ✔ Uniform

4. ✖ Straight directional

Question Number : 119 Question Id : 54947027656 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The carrier swing of a frequency modulated signal is 60 kHz and the modulating signal is a 6 kHz sine wave. The modulation index of the FM signal will be

Options :

1. ✖ 4

2. ✔ 5

3. ✖ 6

4. ✖ 7

Question Number : 120 Question Id : 54947027657 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Assume that bit rate = 9600 kbps. The bandwidth of QPSK and QAM will be

Options :

1. ✖ 19.2 MHz, 9.6 MHz

2. ✔ 9.6 MHz, 4.8 MHz

3. ✖ 4.8 MHz, 19.2 MHz

4. ✖ 19.2 MHz, 4.8 MHz

Question Number : 121 Question Id : 54947027658 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In delta modulation, the slope overload distortion can be reduced by

Options :

1. ✖ Decreasing the step size

2. ✖ Decreasing the granular noise

3. ✖ Decreasing the sampling rate

4. ✔ Increasing the step size

Question Number : 122 Question Id : 54947027659 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a PCM system, if the code-word length is increased from 6 to 8 bits, the signal-to-quantization noise ratio improves by the factor

Options :

1. ✖ 8/6

2. ✖ 8

3. ✖ 12

4. ✔ 16

Question Number : 123 Question Id : 54947027660 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The co-variance function of a bandlimited white noise is

Options :

1. ✔ a Dirac delta function

2. ✖ an exponentially decreasing function

3. ✖ a sinc function

4. ✖ $sinc^2$ function

Question Number : 124 Question Id : 54947027661 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a PCM system the number of quantization levels are 16 and the maximum signal frequency is 4 kHz, the bit transmission rate is

Options :

1. ✖ 64 kbps

2. ✖ 48 kbps

3. ✔ 32 kbps

4. ✖ 16 kbps

Question Number : 125 Question Id : 54947027662 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An angle-modulated signal is expressed by $f_a(t) = \cos(2 \times 10^8 \pi t) + 75 \sin(2 \times 10^3 \pi t)$. The peak frequency deviation of the carrier is then

Options :

1. ✖ 1 kHz

2. ✖ 7.5 kHz

3. ✔ 75 kHz

4. ✖ 100 MHz

Question Number : 126 Question Id : 54947027663 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An air-filled rectangular waveguide has inner dimensions of 3 cm × 2 cm. The wave impedance of the TE_{20} mode of propagation in the waveguide at a frequency of 30 GHz is (free space impedance $\eta_0 = 377$)

Options :

1. ✖ 308

2. ✖ 355

3. ✔ 400

4. ✖ 461

Question Number : 127 Question Id : 54947027664 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The distance (in meters) a wave has to propagate in a medium having a skin depth of 0.1 m so that the amplitude of the wave attenuates by 20 dB, is

Options :

1. ✖ 0.12

2. ✔ 0.23

3. ✖ 0.46

4. ✖ 2.3

Question Number : 128 Question Id : 54947027665 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A transmission line having characteristic impedance Z_1 of varying length in series with a load impedance Z_L appears in a smith chart on

Options :

1. ✖ Constant Resistant circle

2. ✔ Constant VSWR Circle

3. ✖ Constant Reactance circle

4. ✖ Constant Impedance circle

Question Number : 129 Question Id : 54947027666 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Poynting vector (watts/m^2) of an electromagnetic wave is defined as

Options :

1. ✖ $\vec{E} \cdot \vec{H}$

2. ✔ $\vec{E} \times \vec{H}$

3. ✖ $\vec{E} / \vec{H}$

4. ✖ $\varepsilon\mu\, \vec{E} \cdot \vec{H}$

Question Number : 130 Question Id : 54947027667 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Light travels along the optical fibres by which mechanism?

Options :

1. ✖ Refraction

2. ✖ Reflection

3. ✖ Scattering

4. ✔ Total internal reflection

Question Number : 131 Question Id : 54947027668 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

On Smith chart, the distance between the normalized input impedance and the normalized input admittance is

Options :

1. ✔ $\lambda/2$

2. ✖ λ

3. ✖ $3\lambda/2$

4. ✖ 2λ

Question Number : 132 Question Id : 54947027669 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A certain optical fibre has a refractive index of clad (n_1) = 1.40 and that of core (n_2) = 1.05. Its numerical aperture will be

Options :

1. ✖ 0.8575

2. ✔ 0.9260

3. ✖ 0.3500

4. ✖ 0.1585

Question Number : 133 Question Id : 54947027670 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Point charges 30 nC, –20 nC and 10 nC are located at (–1, 0, 2), (0, 0, 0) and (1, 5, –1) respectively. The total flux leaving a cube of side 6m centered at the origin is

Options :

1. ✖ –20 nC

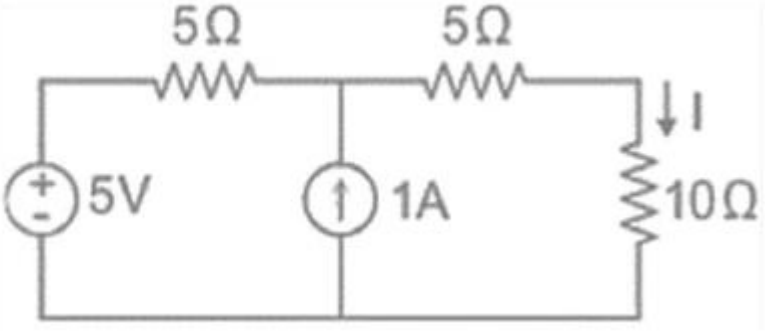
2. ✖ −15 nC

3. ✖ 20 nC

4. ✔ 10 nC

Question Number : 134 Question Id : 54947027671 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the figure shown below, the value of I (in Amperes is)



Options :

1. ✔ 0.5

2. ✖ 1

3. ✖ 1.5

4. ✖ 2

Question Number : 135 Question Id : 54947027672 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a non-degenerate bulk semiconductor with electron density $n = 10^{16}\ cm^{-3}$, the value of $E_C - E_{Fn} = 200$ m eV, where E_C and E_{Fn} denote the bottom of the conduction band energy and electron Fermi level energy, respectively. Assume thermal voltage as 26 m eV and the intrinsic carrier concentration is $10^{10}\ cm^{-3}$. For $n = 0.5 \times 10^{16}\ cm^{-3}$, the closest approximation of the value of $(E_C - E_{Fn})$, among the given options is _____.

Options :

1. ✖ 226 m eV

2. ✖ 174 m eV

3. ✔ 218 m eV

4. ✖ 182 m eV

Question Number : 136 Question Id : 54947027673 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The output power of an AM transmitter is 1 kW when sinusoidally modulated to a depth of 100%. The power in each sideband when the modulation depth is reduced to 50% is

Options :

1. ✔ 41.67 W

2. ✖ 666.67 W

3. ✖ 1000 W

4. ✖ 50 W

Question Number : 137 Question Id : 54947027674 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two point charges $Q_1 = +Q$ and $Q_2 = -Q$ are located at (3m, 0, 0) and (0, 4m, 0) respectively in rectangular coordinates. The electric force on charge Q_2 is along the unit vector

Options :

1. ✖ $0.6u_x + 0.8u_y$

2. ✖ $-0.6u_x - 0.8u_y$

3. ✔ $0.6u_x - 0.8u_y$

4. ✖ $0.8u_x - 0.6u_y$

Question Number : 138 Question Id : 54947027675 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The group of bits 10110101 is serially shifted (right-most bit first) into an eight-bit parallel output shift register with an initial state of 11100100. After two clock pulses, the register contains

Options :

1. ✖ 01011110

2. ✖ 10110101

3. ✔ 01111001

4. ✖ 00101101

Question Number : 139 Question Id : 54947027676 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If α is 0.95, β of a transistor is _____.

Options :

1. ✖ 5

2. ✔ 19

3. ✖ 25

4. ✖ 42

Question Number : 140 Question Id : 54947027677 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A network has seven nodes and five independent loops. The number of branches in the network is

Options :

1. ✖ 13

2. ✖ 12

3. ✔ 11

4. ✖ 10