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 19th Oct 2022 Shift 2
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 :	549470406
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 : 54947028895 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most desirable skill of teacher is to

Options :

make the students understand what the teacher says

1. ✔

cover the prescribed course

2. ✘

keep students relaxed while teaching

3. ✘

keep higher authorities informed about the class activities

4. ✘

Which of the following orders are the three levels of teaching?

(i) Memory level of teaching

(ii) Understanding level of teaching

(iii) Reflective level of teaching

(iv) Pedagogical level of teaching

Options :

1. ✔ (i), (ii), and (iii)

2. ✖ (ii), (iii), and (iv)

3. ✖ (i), (iii), and (iv)

4. ✖ (i), (ii), and (iv)

The best way a teacher can try to inculcate good values among students is

Options :

teaching by way of storytelling

1. ✖

by developing sense of discipline

2. ✖

ideal behaviour of teacher themselves

3. ✔

to take their parents into confidence

4. ✖

Question Number : 4 Question Id : 54947028898 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Morphographs is the term associated with

Options :

Corrective spelling

1. ✔

Corrective teaching

2. ✖

Corrective learning

3. ✖

Corrective behaviour

4. ✖

Question Number : 5 Question Id : 54947028899 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If you get an opportunity to teach a visually challenged student along with normal students, what type of treatment would you like to give him in the class?

Options :

Not giving extra attention because majority may suffer

1. ✖

Take care of him sympathetically in the classroom

2. ✖

You will think that blindness is his destiny and hence you cannot do anything

3. ✖

Arrange a seat in the front row and try to teach at a pace convenient to him

4. ✔

Question Number : 6 Question Id : 54947028900 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a teacher, which of the following methods would be correct for writing on the blackboard?

Options :

Writing fast and as clearly as possible

1. ✖

Writing the matter first and then asking students to read it

2. ✖

Asking a question to students and then writing the answer as stated by them

3. ✖

Writing the important points as clearly as possible

4. ✔

Question Number : 7 Question Id : 54947028901 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who developed the interaction analysis category system in education for increasing the teacher's effectiveness

Options :

Flander

1. ✔

Rayon

2. ✖

Amidon and Simon

3. ✖

Richard Over

4. ✖

Question Number : 8 Question Id : 54947028902 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What do you consider as the main aim of interdisciplinary research?

Options :

To bring out holistic approach to research

1. ✔

To reduce the emphasis of single subject in research domain

2. ✖

To oversimplify the problem of research

3. ✖

To create a new trend in research methodology

4. ✖

Question Number : 9 Question Id : 54947028903 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The research which is exploring new facts through the study of the past is called

Options :

Philosophical research

1. ✖

Historical research

2. ✔

Mythological research

3. ✖

Content analysis

4. ✖

Question Number : 10 Question Id : 54947028904 Display Question Number : Yes Is Question Mandatory : No Calculator : None

The government of India conducts census after every 10 years. The method of research used in this process is

Options :

Case study

1. ✖

Developmental

2. ✖

Survey

3. ✔

Experimental

4. ✖

Question Number : 11 Question Id : 54947028905 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process not needed in experimental research is

Options :

Observation

1. ✖

Manipulation and replication

2. ✖

Controlling

3. ✖

Reference collection

4. ✔

Question Number : 12 Question Id : 54947028906 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ex post facto research means

Options :

The research is carried out after the incident

1. ✔

The research is carried out prior to the incident

2. ✖

The research is carried out along with the happening of an incident

3. ✖

The research is carried out keeping in mind the possibilities of an incident

4. ✖

Arrange the following steps of research in correct sequence:

    I. Identification of research problem

    II. Listing of research objectives

    III. Collection of data

    IV. Methodology

    V. Data analysis

    VI. Results and discussion

Options :

1. ✖   I, II, III, V, IV, and VI

2. ✔   I, II, III, IV, V, and VI

3. ✖   II, I, III, IV, V, and VI

4. ✖   II, I, IV, III, V, and VI

A variable that is presumed to cause a change in another variable is called

Options :

A categorical variable

1. ✖

A dependent variable

2. ✖

An independent variable

3. ✔

An intervening variable

4. ✖

Is Section Default? :   null

Question Id : 54947028909 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:

The great Acharyas have said that everything discovered has a great goal; surrender yourself to that goal and act towards it by drawing your inspiration from that goal whereby you will get a new column of energy. Do not allow this energy to be dissipated in the futile memory of past regrets or failures, or excitement of the present, and bring that entire energy focused into activity, that is, the highest creative action in the world outside, whereby the individual who is till now considered the most inefficient finds his way to the highest achievement and success.

This can be said very easily in a second. In order to train our mind to this attitude, consider able training is needed because we have already trained our mind wrongly to such an extent that we have become perfect in imperfections. Not knowing the art of action, we have mastered artists in doing wrong things; the totality of activity will bring the country to a wrong end indeed.

If each one is given a car to achieve an ideal socialistic pattern and nobody knows driving, but starts driving, what would be the condition on road? Everybody has equal rights on the public road. Then, each car will necessarily dash against the other and there is bound to be a jumble.

There seems to be a very apt pattern of life that we are heading to. Every one of us is a vehicle. We know how to go forward. The point intellect is very powerful and everybody is driving but nobody knows how to control the mental energy and direct it properly or guide it to the proper destination.

Sub questions

Question Number : 15 Question Id : 54947028910 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 effect of wrong training of our mind?

Options :

Becoming perfect in all aspects of life

1. ✖

Becoming master artists

2. ✖

Taking the country to wrong destination

3. ✖

Carrying on activities without knowing how to control mental energies

4. ✔

Question Number : 16 Question Id : 54947028911 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The source of energy according to the author is

Options :

Highest creative action

1. ✖

Proper training of mind

2. ✖

Inspiration from past events

3. ✖

Stimulation obtained from a set goal

4. ✔

Question Number : 17 Question Id : 54947028912 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The author's main focus in the passage is

Options :

Finding out a worthy goal in life

1. ✖

Regulation of energy in proper channels

2. ✔

Struggle for equal rights

3. ✖

Car accidents due to lack of driving skills

4. ✖

The country may perish because of

Options :

Failures in past acts

1. ✖

Wrong deeds performed without proper knowledge

2. ✔

Complete surrender to anyone goal

3. ✖

Directing mental energy to the right destination

4. ✖

The author considers everyone to be a vehicle that knows how to go forward

Options :

Without driving energy

1. ✖

With least consideration for others

2. ✖

With no sense of direction

3. ✔

With no control on speed

4. ✖

Question Number : 20 Question Id : 54947028915 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 considered as the most suitable title for the passage?

Options :

Human mind versus car

1. ✖

Channelization of mental energy

2. ✔

Mental energy

3. ✖

Life without a goal

4. ✖

Question Number : 21 Question Id : 54947028916 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How do you interpret that "we have become perfect in imperfections"?

Options :

We have already trained our minds wrongly

1. ✔

We have trained the artists with proper art of action

2. ✖

Right performance with wrong training

3. ✖

Wrong performance with right training

4. ✖

Is Section Default? :   null

Question Number : 22 Question Id : 54947028917 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 three components are parts of the human communication process?

Options :

Message, recording, and feedback

1. ✖

Noise, feedback, and jargon

2. ✖

Message, noise, and feedback

3. ✔

Feedback, message, and critiquing

4. ✖

Question Number : 23 Question Id : 54947028918 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Communication becomes circular when

Options :

The decoder becomes an encoder

1. ✔

The feedback is absent

2. ✖

The source is credible

3. ✖

The channel is clear

4. ✖

Question Number : 24 Question Id : 54947028919 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 statement(s) is/are true in context of paraphrasing?

(A) It is basically about stating in your own words, your understanding of what has just been said.

(B) It gives speaker opportunity to find out what message s/he is getting across to you.

Options :

Only A

1. ✖

Only B

2. ✖

Both A and B

3. ✔

Neither A nor B

4. ✖

Question Number : 25 Question Id : 54947028920 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In communication, chatting in internet is

Options :

Verbal communication

1. ✔

Non-verbal communication

2. ✖

Parallel communication

3. ✖

Grapevine communication

4. ✖

Question Number : 26 Question Id : 54947028921 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Chinese Cultural Revolution leader Mao Zedong used a type of communication to talk to the masses known as

Options :

Mass line communication

1. ✔

Group communication

2. ✖

Participatory communication

3. ✖

Dialogue communication

4. ✖

Question Number : 27 Question Id : 54947028922 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Telephone is an example of

Options :

Linear communication

1. ✔

Non–linear communication

2. ✖

Circular

3. ✖

Mechanized

4. ✖

Question Number : 28 Question Id : 54947028923 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A message beneath a message is labelled as

Options :

Embedded text

1. ✖

Internal text

2. ✖

Intertext

3. ✖

Subtext

4. ✔

Question Number : 29 Question Id : 54947028924 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

0, 3, 8, 15, 24, 35, 48, 63, …

Options :

80

1. ✔

82

2. ✖

83

3. ✖

84

4. ✖

Question Number : 30 Question Id : 54947028925 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

ABC, CBA, DEF, … , GHI, IHG

Options :

JKL

1. ✖

FED

2. ✔

DFE

3. ✖

IJK

4. ✖

If 'PAT' is coded as 'QRBCUV', then how will you code 'GRACE'?

Options :

HISTBCDEFG

1. ✔

HISTBCDEGF

2. ✖

HISBTCDEFG

3. ✖

HISTBCEDFG

4. ✖

If B is the only child of C's grandfather's only daughter, then how is C's father related to B?

Options :

Maternal uncle

1. ✔

Father

2. ✖

Paternal uncle

3. ✖

Can't be determined

4. ✖

Question Number : 33 Question Id : 54947028928 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Shalini walked 15 m towards south, took right turn, and walked 3 m. She took a right turn again and walked 15 m before stopping. Which direction did Shalini face after stopping?

Options :

West

1. ✖

South

2. ✖

East

3. ✖

North

4. ✔

If A's income is 25% more than B's and B's income is 20% more than C's, by what percent is A's income more than C's?

Options :

15%

1. ✖

25%

2. ✖

33.5%

3. ✖

50%

4. ✔

A train whose length is 320 m is running at a speed of 36 kmph. How much time will it take to pass a pole?

Options :

30 s

1. ✖

32 s

2. ✔

36 s

3. ✖

40 s

4. ✖

Question Number : 36 Question Id : 54947028931 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A deductive argument is valid if

Options :

Premises are false and conclusion is true

1. ✖

Premises are false and conclusion is also false

2. ✖

Premises are true and conclusion is false

3. ✖

Premises are true and conclusion is true

4. ✔

Question Number : 37 Question Id : 54947028932 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The spread of the Internet for higher education is premised on

Options :

Research and development is vital

1. ✖

Browsing encourages critical thinking

2. ✖

Easy management and dissemination of knowledge

3. ✔

India should be second to none in the world

4. ✖

Question Number : 38 Question Id : 54947028933 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 two statements followed by two conclusions I and II. Assuming that the given statements are true even if they are at variance with the commonly known facts, pick up one of the following answer choice which you think is correct.

Statements:
       All boys are men.
       All men are fathers.
Conclusions:
       I. Some men are boys.
       II. All boys are fathers.

Options :

    If only conclusion I follows

1. ✖

    If only conclusion II follows

2. ✖

If both I and II follow

3. ✔

If neither I nor II follows

4. ✖

Question Number : 39 Question Id : 54947028934 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 two statements followed by two conclusions I and II. Assuming that the given statements are true even if they are at variance with the commonly known facts, pick up one of the following answer choice which you think is correct.

Statements:
Some benches are chairs.
Hammer is a bench.
Conclusions:
I. Some chairs are benches.
II. Hammer is not a chair.

Options :

If only conclusion I follows

1. ✔

If only conclusion II follows

2. ✖

If both I and II follow

3. ✖

If neither I nor II follows

4. ✖

Question Number : 40 Question Id : 54947028935 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 is not an argument?

Options :

Devadutt does not eat in the day so he must be eating at night.

1. ✖

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

2. ✔

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

3. ✖

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

4. ✖

Which of the following are Central Universities?
(i) Pondicherry University
(ii) Vishwa Bharati
(iii) H.N.B. Garhwal University
(iv) Kurukshetra University
Select the correct answer from the codes given below:

Options :

(i), (ii), and (iii)

1. ✔

(i), (iii), and (iv)

2. ✖

(ii), (iii), and (iv)

3. ✖

(i), (ii), and (iv)

4. ✖

Question Number : 42 Question Id : 54947028937 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The first virtual University of India came up in

Options :

Andhra Pradesh

1. ✖

Maharashtra

2. ✔

Uttar Pradesh

3. ✖

Tamil Nadu

4. ✖

Is Section Default? : null

Question Id : 54947028938 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 table carefully and answer questions 43 - 45. It consists of breakup of expenses of a company over different years.

Year	Salary	Fuel & Transport	Bonus	Interest on loans	Taxes
		Items of expenditure rupees in lakhs			
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

Sub questions

Question Number : 43 Question Id : 54947028939 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 amount of interest per year which the company had to pay during this period?

Options :

1. ✖   32.43 lakhs

33.72 lakhs

2. ✖

34.18 lakhs

3. ✖

36.66 lakhs

4. ✔

Question Number : 44 Question Id : 54947028940 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Total expenditure on all these items in 1998 was approximately what percent of the total expenditure in 2002?

Options :

62%

1. ✖

66%

2. ✖

69%

3. ✔

71%

4. ✖

The ratio between the total expenditure on taxes for all the years and the total expenditure on fuel and transport for all the years, respectively, is approximately

Options :

1. ✖ 4 : 7

2. ✔ 10 : 13

3. ✖ 15 : 18

4. ✖ 5 : 8

Is Section Default? :   null

Question Id : 54947028942 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 pie chart care fully and answer questions 46–49. It consists of data on tourist arrival from different countries. Total tourist traffic is 20 lakhs.
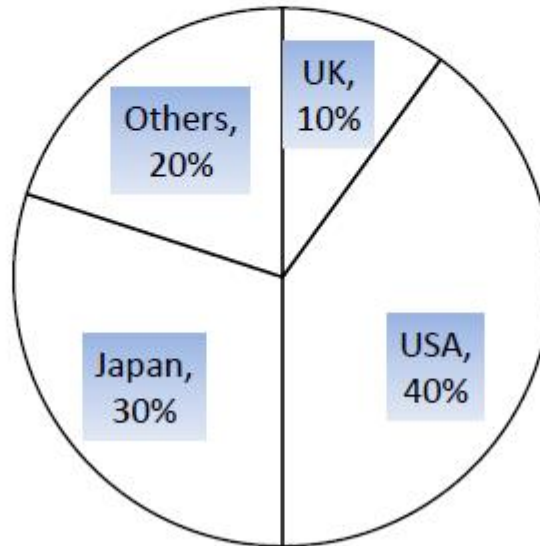
Sub questions

Question Number : 46 Question Id : 54947028943 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The difference between tourist numbers from USA and Japan is

Options :

2 lakhs

1. ✔

3 lakhs

2. ✘

4 lakhs

3. ✘

5 lakhs

4. ✘

Question Number : 47 Question Id : 54947028944 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the number of tourists from UK doubles up while the total remains the same, then the new angle extended by tourists from UK will be

Options :

60°

1. ✘

72°

2. ✔

90°

3. ✘

120°

4. ✖

The angle extended at the centre by sector of tourists from USA is

Options :

108°

1. ✖

118°

2. ✖

144°

3. ✔

165°

4. ✖

If the tourist traffic from USA shows a growth of 50% while the total number of tourists remains the same, then the new percentage from USA is

Options :

1. ✖   40%

2. ✖   45%

3. ✔   50%

4. ✖   60%

Is Section Default? :   null

Question Number : 50 Question Id : 54947028947 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The institution promoted by the Department of IT to provide communication infrastructure and services to academic research institutions in India is

Options :

1. ✖   INFLIBNET

2. ✖   UGC

ERNET

3. ✔

No Option

4. ✖

Question Number : 51 Question Id : 54947028948 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

MICR stands for

Options :

Magnetic Ink Character Reader

1. ✔

Magnetic Ink Code Reader

2. ✖

Magnetic Ink Cases Reader

3. ✖

No Option

4. ✖

Question Number : 52 Question Id : 54947028949 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 related to information security on the Internet?

Options :

Data encryption

1. ✖

Water marking

2. ✖

Data hiding

3. ✖

Information retrieval

4. ✔

Question Number : 53 Question Id : 54947028950 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

World Wide Web was proposed by

Options :

Bill Gates

1. ✖

ARPANET

2. ✖

Tim Berners-Lee

3. ✖

Bill Rogers

4. ✔

Question Number : 54 Question Id : 54947028951 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Name of the protocol that supports linking from one web page to another page

Options :

HTML

1. ✖

IP

2. ✖

HTTP

3. ✔

FTP

4. ✖

Question Number : 55 Question Id : 54947028952 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

ISDN stands for

Options :

Integrated Services Digital Network

1. ✔

Intelligent Services Digital Network

2. ✖

Individual Services Digital Network

3. ✖

Image Services Digital Network

4. ✖

Question Number : 56 Question Id : 54947028953 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Exclusive educational channel of IGNOU is known as

Options :

Gyan Darshan

1. ✔

Gyan Vani

2. ✖

Doordarshan

3. ✖

Prasar Bharati

4. ✖

Question Number : 57 Question Id : 54947028954 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ozone depletion is caused due to increase in the level of

Options :

Water vapour

1. ✖

Chlorofluorocarbo

2. ✔

Oxygen

3. ✖

Carbon monoxide

4. ✖

Which of the following is the most dangerous and long-lasting?

Options :

Nuclear waste

1. ✔

Volcano ash

2. ✖

Mining waste

3. ✖

Biomedical waste

4. ✖

Petrol engines release gaseous oxides of

Options :

Sulphur

1. ✖

Nitrogen

2. ✔

Phosphorous

3. ✖

Carbon

4. ✖

Question Number : 60 Question Id : 54947028957 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 causes the least pollution when burnt?

Options :

Petrol

1. ✖

Diesel

2. ✖

Coal

3. ✖

Natural gas

4. ✔

Question Number : 61 Question Id : 54947028958 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The increased water demand in the cities can be better met by

Options :

Larger desalination plants

1. ✖

Adoption of conservation measures

2. ✔

Drilling more tube wells

3. ✖

By sewerage treatment plants

4. ✖

Question Number : 62 Question Id : 54947028959 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 is a renewable resource?

Options :

Natural gas

1. ✖

Petroleum

2. ✖

Ground water

3. ✔

Coal

4. ✖

Question Number : 63 Question Id : 54947028960 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which National Park is situated at the highest altitude in the country?

Options :

Corbett National Park

1. ✖

Hemis National Park

2. ✔

Silent Valley National Park

3. ✖

Dachigam National Park

4. ✖

Question Number : 64 Question Id : 54947028961 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The National Knowledge Commission, a high level advisory body to Prime Minister of India, with the objective of transforming India into a knowledge society was set up in the year

Options :

2005

1. ✔

2006

2. ✖

2007

3. ✖

2008

4. ✖

Question Number : 65 Question Id : 54947028962 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who was the chairman of University Education Commission set up in 1948?

Options :

Dr S. Radhakrishnan
1. ✔

Dr D. S. Kothari
2. ✖

Maulana Abul Kalam Azad
3. ✖

C. D. Deshmukh
4. ✖

Question Number : 66 Question Id : 54947028963 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Constitution of India (originally) is divided into

Options :

20 parts
1. ✖

22 parts

2. ✔

24 parts

3. ✖

42 parts

4. ✖

Question Number : 67 Question Id : 54947028964 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which Fundamental Right is concerned with the abolition of social distinctions?

Options :

Right to equality

1. ✔

Right against exploitation

2. ✖

Right to life and liberty

3. ✖

Cultural and educational rights

4. ✖

Question Number : 68 Question Id : 54947028965 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An ordinance can be promulgated in case

Options :

1. ✖ of conflict between two Houses on a bill

2. ✔ both Houses of Parliament are not in session

3. ✖ the Lok Sabha has been dissolved

4. ✖ of elections

Question Number : 69 Question Id : 54947028966 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A Money Bill passed by the Lok Sabha has to be passed by Rajya Sabha within

Options :

Three months

1. ✖

Fourteen days

2. ✔

Twenty-one days

3. ✖

One month

4. ✖

By which of the following measures NITI Aayog was established?

Options :

Cabinet resolution

1. ✔

Parliament resolution

2. ✖

President

3. ✖

Prime Minister

4. ✖

Electrical Engineering

Section Id :	549470407
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 : 54947028968 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The two linearly independent solutions of the differential equation

$x^2 y'' + xy' - y = 0$ are _____

Options :

$x,\ x^2$

1. ✖

2. ✖ $x, \dfrac{1}{x^2}$

3. ✔ $x, \dfrac{1}{x}$

4. ✖ x, x^n

Question Number : 72 Question Id : 54947028969 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $P = \begin{bmatrix} 1 & \alpha & 3 \\ 1 & 3 & 3 \\ 2 & 4 & 4 \end{bmatrix}$ is the Adjoint of a 3×3 matrix A and $|A| = 4$ then $\alpha = \underline{\hspace{1cm}}$.

Options :

1. ✖ 5

2. ✖ 0

3. ✔ 11

4. ✖ 40

Question Number : 73 Question Id : 54947028970 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(0)=1, f(1)=2.7, f(2)=7.4, f(3)=20.1, f(4)=54.6$ and $h=1$ then $\int_{0}^{4} f(x)dx$,

by Simpson's $\frac{1}{3}rd$ rule is _____.

Options :

1. ✖ 1.06

2. ✖ 1.16

3. ✖ 1.26

4. ✔ 1.36

Question Number : 74 Question Id : 54947028971 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 TRUE?

Options :

1. ✖ The circulation along any closed surface is zero

2. ✖ Every solenoidal field is conservative

3. ✔ The flux across every closed surface is zero

4. ✖ In solenoidal field F for which $\nabla \cdot F = 0$, the vector F can always be expressed as the curl of a vector V

Question Number : 75 Question Id : 54947028972 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A die is tossed thrice. A success of obtaining 1 or 6 on a toss. The mean and variance are _____ respectively.

Options :

1. ✔ 1 and $\dfrac{2}{3}$

2. ✖ 3 and $\dfrac{2}{3}$

3. ✖ 1 and $\dfrac{1}{3}$

$1 \text{ and } \dfrac{4}{3}$

4. ✖

If z_1 and z_2 are two complex numbers such that $|z_1| = 9$ and $|z_2 - 3 - 4i| = 4$ then the minimum value of $|z_1 - z_2| = $ _____.

Options :

1. ✔ 0

2. ✖ 1

3. ✖ 2

4. ✖ $\sqrt{2}$

Average power in a pure inductive circuit is equal to

Options :

1. ✖ Half of the peak value

2. ✖ Double the peak value

3. ✔ Zero

4. ✖ Peak value

Question Number : 78 Question Id : 54947028975 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The current in a RLC series circuit at resonance is

Options :

1. ✔ Maximum

2. ✖ Minimum

3. ✖ Infinity

4. ✖ zero

Question Number : 79 Question Id : 54947028976 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The time constant of an RC circuit is defined as the time taken by the voltage across the capacitor to become_____ of its final value

Options :

1. ✔ 63.2%

2. ✖ 36.8%

3. ✖ 50%

4. ✖ 100%

Question Number : 80 Question Id : 54947028977 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
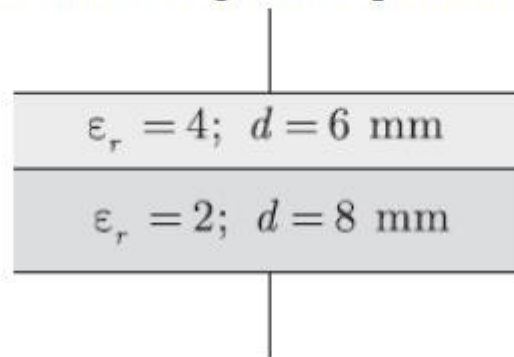
A parallel plate capacitor is shown in figure. It is made with two square metal plates of 400 mm side. The 14 mm space between the plates is filled with two layers of dielectrics with $\varepsilon_r = 4$ and $\varepsilon_r = 2$, with 6 mm and 8 mm thickness respectively. Neglecting fringing of fields at the edge the capacitance is

$\varepsilon_r = 4; \quad d = 6$ mm

$\varepsilon_r = 2; \quad d = 8$ mm

Options :

1. ✗   1298 pF

2. ✗   944 Pf

3. ✗   354 pF

4. ✔   257 pF

Question Number : 81 Question Id : 54947028978 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The expression for net torque acting on the dipole, T= _____

Options :

1. ✗ $PE \cos \theta$

2. ✔ $PE \sin \theta$

3. ✗ PE

4. ✗ $P^2 E \sin \theta$

Question Number : 82 Question Id : 54947028979 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Noise generated by an amplifier of radio is an example for?

Options :

1. ✖ Discrete signal

2. ✖ Deterministic signal

3. ✔ Random signal

4. ✖ Periodic signal

Question Number : 83 Question Id : 54947028980 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 process of 'aliasing'?

Options :

1. ✖ Peaks overlapping

2. ✖ Phase overlapping

3. ✖ Amplitude overlapping

Spectral overlapping

4. ✔

Question Number : 84 Question Id : 54947028981 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 220 V DC shunt machine supplies 20 A at 200 V as a generator. The armature resistance is 0.2 ohm. If the machine is now operated as a motor at same terminal voltage and current but with the flux increased by 10%, the ratio of motor speed to generator speed is

Options :

0.87

1. ✔

0.95

2. ✘

0.96

3. ✘

1.06

4. ✘

Question Number : 85 Question Id : 54947028982 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a transformer, zero voltage regulation at full load is

Options :

1. ✘   Not possible

2. ✘   Possible at unity power factor load

3. ✔   Possible at leading power factor load

4. ✘   Possible at lagging power factor load

Question Number : 86 Question Id : 54947028983 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In an RLC series circuit excited by an AC source, the voltage across resistor is 80 V, voltage across inductor is 90 V and across capacitor is 30 V. The total voltage across the RLC circuit is _____.

Options :

1. ✘   80 V

2. ✘   200 V

3. ✘   120 V

4. ✔   100 V

Question Number : 87 Question Id : 54947028984 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A load is connected to a 1-ϕ AC source. The voltage applied across the load is v = 100 sin(20t) and the current through it is i = 10 sin(20t-60°). The power factor of the load is

Options :

1. ✖ unity

2. ✖ zero

3. ✔ 0.5 lagging

4. ✖ 0.5 leading

Question Number : 88 Question Id : 54947028985 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following figure C_1 and C_2 are ideal capacitors. C_1 had been charged to 12V before the ideal switch S is closed at $t = 0$. The current $i(t)$ for all t is
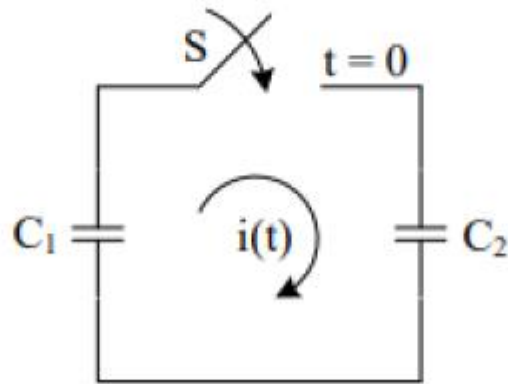
Options :

1. ✖   Zero

2. ✖   A step function

3. ✖   An exponentially decaying function

4. ✔   An impulse function

Question Number : 89 Question Id : 54947028986 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 relationship is true between electric field intensity (E) and absolute electric potential?

Options :

1. ✖ $E = \nabla V$

2. ✔ $E = -\nabla V$

3. ✖ $V = \nabla . E$

4. ✖ $V = -\nabla$

Question Number : 90 Question Id : 54947028987 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The inductance of a long solenoid of length 1000 cm wound uniformly with 3000 turns on a cylindrical paper tube of 60 mm diameter is

Options :

1. ✖   3.2 μH

2. ✖   3.2 H

3. ✔   3.2 mH

4. ✖   32 mH

Question Number : 91 Question Id : 54947028988 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 statement holds for the divergence of electric and magnetic flux density?

Options :

1. ✖ Both are zero

2. ✖ These are zero for static densities but non-zero for time varying densities

3. ✖ It is zero for the electric flux density

4. ✔ It is zero for the magnetic flux density

Question Number : 92 Question Id : 54947028989 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 false for a continuous time signal

Options :

1. ✖ Any signal can be expressed as the sum of an odd and an even signals

2. ✔ Sum of two periodic signals is always periodic

Any periodic signal can be expressed as sum of sinusoidal signals

3. ✖

The derivative of a periodic signal is always periodic

4. ✖

Question Number : 93 Question Id : 54947028990 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Fourier transform of Continuous time signal is given by $X(\omega) = \frac{1}{(10+j\omega)^2}$. The value of $|\ln x(t)|$ at $t = 1$ is

Options :

1. ✖   0

2. ✔   10

3. ✖   −10

4. ✖   1

Question Number : 94 Question Id : 54947028991 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total losses in a transformer operating at 50% of load with designed no load and full load losses 5 kW and 50 kW respectively are _____.

Options :

1. ✖ 30 kW

2. ✖ 55 kW

3. ✔ 17.5 kW

4. ✖ 37.5 kW

Question Number : 95 Question Id : 54947028992 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two alternators rated 200 MVA and 300 MVA respectively are working in parallel
and supplying a total load of 80 MW. Speed regulation of both the alternator is 4%.
The load sharing between them will be

Options :

1. ✖ 30 MW, 50 MW

2. ✖ 40 MW each

3. ✔ 32 MW, 48 MW

4. ✖ 36 MW, 44 MW

Question Number : 96 Question Id : 54947028993 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The results of slip test on a star connected salient pole alternator are

$V_{max}/ph = 180V$, $V_{min}/ph = 176V$, $I_{max} = 11A$, $I_{min} = 9A$.

The values of X_d and X_q will be

Options :

1. ✔ $X_d = 20$, $X_q = 16$

2. ✘ $X_d = 16.36$, $X_q = 19.55$

3. ✘ $X_d = 16$, $X_q = 20$

4. ✘ $X_d = 19.55$, $X_q = 16.36$

Question Number : 97 Question Id : 54947028994 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a Scott connected transformer, the primary and teaser turns respectively are

Options :

1. ✔   N, $\sqrt{3}$ N/2

2. ✘   N, $2/\sqrt{3}$ N

3. ✖ $\sqrt{3}$ N, N

4. ✖ N/2, N

Question Number : 98 Question Id : 54947028995 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The load current of a DC series motor is 50 A, when supplying a full load torque. If the current is reduced to 25 A, the torque will be

Options :

1. ✔ 25% of full load torque

2. ✖ 50% of full load torque

3. ✖ 150% of full load torque

4. ✖ Same as full load torque

Question Number : 99 Question Id : 54947028996 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For sparkless commutation, the armature reaction effect in a DC machine is neutralized by

Options :

Increasing field excitation

1. ✖

Using compensating winding and commutating poles

2. ✔

Fixing brush axis in alignment with the interpole axis

3. ✖

Shifting the brush axis from GNA to MNA

4. ✖

Question Number : 100 Question Id : 54947028997 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum torque that a synchronous machine develops at rest for any angular position of the rotor at rated supply voltage and frequency is known as

Options :

pull up torque

1. ✖

reluctance torque

2. ✖

synchronous torque

3. ✖

locked rotor torque

4. ✔

Question Number : 101 Question Id : 54947028998 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Crawling in induction motor is due to

Options :

1. ✖ low supply voltage

2. ✖ high starting load

3. ✔ presence of seventh harmonic in the flux wave

4. ✖ frequency fluctuations in supply voltage

Question Number : 102 Question Id : 54947028999 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The interrupting time of a circuit breaker is the period between the instant of

Options :

1. ✖ initiation of short circuit and the arc extinction on an opening operation

2. ✔ energizing of the trip circuit and the arc extinction on an opening operation

3. ✖ initiation of short circuit and the parting of primary arc contacts

4. ✖ energizing of the trip circuit and the parting of primary arc contacts

Question Number : 103 Question Id : 54947029000 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An 800 kV transmission line has a maximum power transfer capacity of P. If it is operated at 400 kV with the series reactance unchanged, the new maximum power transfer capacity is approximately

Options :

1. ✖ P

2. ✖ 2P

3. ✖ P/2

4. ✔ P/4

Question Number : 104 Question Id : 54947029001 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider a lossy transmission line with V_1 and V_2 as the sending and receiving end voltages, respectively. Z and X are the series impedance and reactance of the line, respectively. The steady-state stability limit of the transmission line will be

Options :

1. ✖   greater than $\left|\dfrac{V_1 V_2}{X}\right|$

2. ✔   less than $\left|\dfrac{V_1 V_2}{X}\right|$

3. ✖   equal to $\left|\dfrac{V_1 V_2}{X}\right|$

4. ✖   equal to $\left|\dfrac{V_1 V_2}{z}\right|$

Question Number : 105 Question Id : 54947029002 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A lossless transmission line having Surge Impedance Loading (SIL) of 2000 MW is provided with a uniformly distributed series capacitive compensation of 36%. Then SIL of the compensated transmission line will be

Options :

1. ✖   2000 MW

2. ✖   2720 MW

3. ✔ 2500 MW

4. ✘ 1280 MW

Question Number : 106 Question Id : 54947029003 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A power system with negligible resistance, the fault current at a point is 8 pu. The pu value of the series reactance to be included at the fault point to limit the fault current to 5 pu is

Options :

1. ✘ 0.125 pu

2. ✔ 0.075 pu

3. ✘ 0.2 pu

4. ✘ 3 pu

Question Number : 107 Question Id : 54947029004 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a transmission line is shorted at the receiving end, the value of reflection coefficient of current is

Options :

1. ✗   -1

2. ✔   1

3. ✗   0

4. ✗   2

Question Number : 108 Question Id : 54947029005 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Skin effect in a conductor of diameter 'd' is proportional to

Options :

1. ✗ $\sqrt{d}$

2. ✔ d^2

3. ✗ d^3

4. ✗ d^4

Question Number : 109 Question Id : 54947029006 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most economic load on underground cable is

Options :

1. ✖ Greater than its surge loading

2. ✔ Less than the surge loading

3. ✖ Equal to the surge loading

4. ✖ May be less, may be more than the surge loading

Question Number : 110 Question Id : 54947029007 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Y_{bus} of a power system with 80 bus and 200 lines has a sparsity of _____ %

Options :

1. ✖ 91.5

2. ✔ 92.5

3. ✖ 93.5

4. ✖ 94.5

Question Number : 111 Question Id : 54947029008 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A three phase, delta-wye connected, 15 MVA, 33/11 kV transformer is protected by CTs. Determine the CT ratio on the high voltage side for differential protection such that the circulating current (through the transformer delta) does not exceed 5A.

Options :

1. ✔ 157.46

2. ✖ 155.46

3. ✖ 787.3

4. ✖ 757.6

Question Number : 112 Question Id : 54947029009 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A salient pole alternator delivers maximum power when the load angle δ is

Options :

1. ✖ 0°

2. ✖   90°

3. ✔   less than 90° but not equal to 0°

4. ✖   greater than 90°

Question Number : 113 Question Id : 54947029010 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 1500 MVA, 1800 rpm synchronous generator has $WR^2 = 6 \times 10^6$ lb.ft². What is the value of H of the machine relative to 100 MVA base?

Options :

1. ✖   2.994 MJ/MVA

2. ✔   44.91 MJ/MVA

3. ✖   2.694 MJ/MVA

4. ✖   46.93 MJ/MVA

Question Number : 114 Question Id : 54947029011 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The open loop transfer function of the feedback control system is given by $G(s) = K(s + 3) / s(s + 4)^2(s + 5)(s + 6)$. The number of asymptotes and the centroid of asymptotes of the root loci of closed loop system is?

Options :

1. ✗   −4 and (−4,0)

2. ✓   4 and (−4,0)

3. ✗   −3 and (−12,0)

4. ✗   3 and (−12,0)

Question Number : 115 Question Id : 54947029012 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Due to addition of a pole at origin, the polar plot gets shifted by ____ at $\omega = 0$?

Options :

1. ✗   −45°

2. ✗   −60°

3. ✓   −90°

4. ✖ $-180°$

Question Number : 116 Question Id : 54947029013 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the type and order of the system given below:
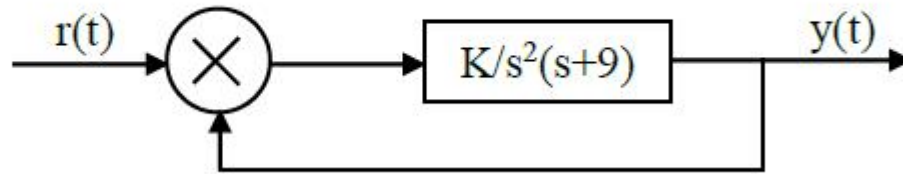
Options :

1. ✖ 2,3

2. ✔ 2,2

3. ✖ 3,3

4. ✖ 3,2

Question Number : 117 Question Id : 54947029014 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How can the steady state error in a system be reduced?

Options :

1. ✖ By decreasing the type of system

2. ✔ By increasing system gain

3. ✘ By decreasing the static error constant

4. ✘ By increasing the input

Which of the following is an example of a bounded signal

Options :

1. ✔ e^{-8t}

2. ✘ e^{2t}

3. ✘ t^2

4. ✘ $e^{2t} \sin t$

Characteristic equation of a system is $s^4 + 3 s^3 + 14 s^2 + (K + 2) s + 3 K = 0$. The angle of asymptotes are

Options :

1. ✔   60, 180, 300

2. ✖   60, 180, 240

3. ✖   45, 135, 225, 315

4. ✖   90, 180, 300

Question Number : 120 Question Id : 54947029017 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The effect of stray magnetic field on the actuating torque of a portable instrument is maximum when the operating field of the instrument and the stray fields are

Options :

1. ✖   perpendicular

2. ✔   parallel

3. ✖   inclined at 60°

4. ✖   inclined at 30°

A PMMC voltmeter is connected across a series combination of DC voltage source $V_1 = 2V$ and AC voltage source $V_2(t) = 3 \sin(4t)$ V. The meter reads

Options :

1. ✔ 2 V

2. ✖ 5 V

3. ✖ $(2 + \sqrt{3}/2)$ V

4. ✖ $(\sqrt{17}/2)$V.

Two wattmeters are used to measure the power in a 3-phase balanced system. What is the power factor of the load when one wattmeter reads twice the other?

Options :

1. ✖ 0

2. ✖ 0.5

3. ✖ 1

4. ✔ 0.866

Question Number : 123 Question Id : 54947029020 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a Weston frequency meter, the magnetic axes of the two fixed coils are

Options :

1. ✖ Inclined at 60°

2. ✖ Inclined at 120°

3. ✖ Parallel

4. ✔ Perpendicular

Question Number : 124 Question Id : 54947029021 Display Question Number : Yes Is Question Mandatory : No Calculator : None
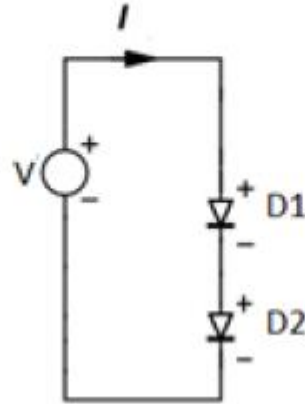Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a DVM, a transducer converts _____

Options :

1. ✖ input to proportional current

2. ✗   input to proportional power

3. ✓   input to proportional voltage

4. ✗   input to proportional resistance

Question Number : 125 Question Id : 54947029022 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A Crompton's Potentiometer is provided with a dial resistor having 15 steps of 10 Ω each and a slide wire of 10 Ω resistance. The slide wire is divided into 100 divisions and one fifth of a division can be read with certainty. The working current of the potentiometer is 10 mA. The range and resolution of the potentiometer are respectively,

Options :

1. ✓   1.6 V, 0.2 mV

2. ✗   1.6 V, 0.5 mV

3. ✗   1.5 V, 0.1 mV

4. ✗   1.6 V, 0.1 mV

Find the current I if both diodes are identical. Voltage V = 0.8 V and let the reverse saturation current be 10^{-9}A.

Options :

1. ✔   4.8 mA

2. ✖   3.2 mA

3. ✖   2.5 mA

4. ✖   7 mA

RC phase shift oscillators contain a minimum of _____ Phase shift networks.

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 0

Question Number : 128 Question Id : 54947029025 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
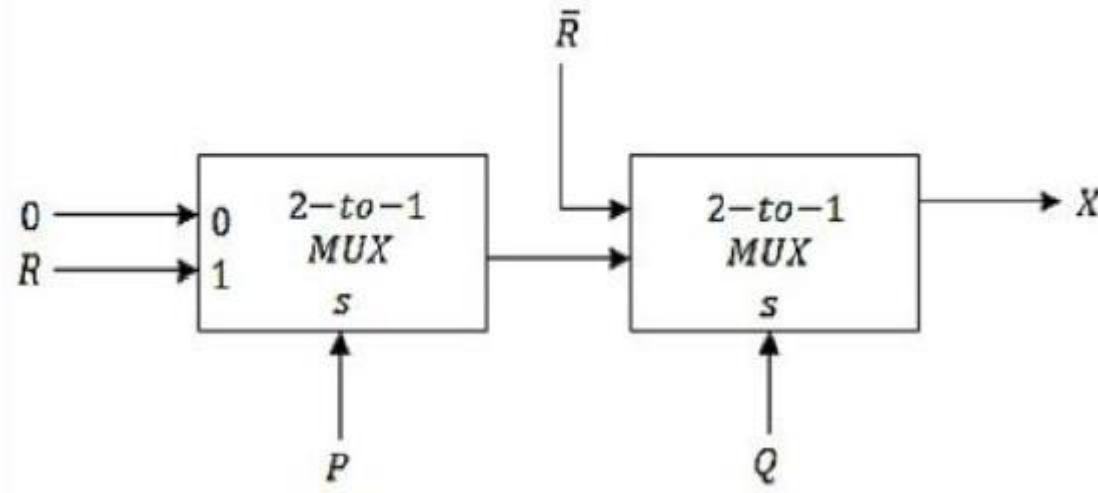
The household energy meter is

Options :

1. ✖ an indicating instrument

2. ✖ a recording instrument

3. ✔ an integrating instrument

4. ✖ an absolute instrument

Consider the two cascaded 2-to-1 multiplexers as shown in the figure.
The minimal sum of products form of the output X is

Options :

1. ✖ $P'Q'+PQR$

2. ✖ $P'Q+QR$

3. ✖ $PQ+P'Q'R$

4. ✔ $QR'+PQR$

In an op-amp differentiator

Options :

1. ✔ The amplitude of output is proportional to rate of change of input

2. ✘ The amplitude is proportional to input

3. ✘ Output occurs when input is finite and constant

4. ✘ Polarity of input and output are same

Question Number : 131 Question Id : 54947029028 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ logic family can be used at very high frequencies greater than 100MHz in a 4-bit synchronous counter.

Options :

1. ✘ TTLAS

2. ✘ TTLLS

3. ✘ CMOS

4. ✔ ECL

Question Number : 132 Question Id : 54947029029 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 $4K \times 8bit$ RAM whose starting address is AA00 H. The address of the last byte in this RAM is

Options :

1. ✖   0FFF H

2. ✖   1000 H

3. ✔   B9FF H

4. ✖   BA00 H

Question Number : 133 Question Id : 54947029030 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 2-to-1 multiplexers required to realize a 4-to-1 multiplexer is

Options :

1. ✔   3

2. ✖   4

3. ✖   1

4. ✖   2

Question Number : 134 Question Id : 54947029031 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A six pulse thyristor bridge rectifier is connected to a balanced three-phase, 50Hz AC source. Assuming that the DC output current of the rectifier is constant, the lowest harmonic component in the AC input current is

Options :

1. ✖   100 Hz

2. ✖   150 Hz

3. ✔   250 Hz

4. ✖   300 Hz

Question Number : 135 Question Id : 54947029032 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The conduction loss versus device current characteristic of a power MOSFET is best approximated by

Options :

1. ✔ a parabola

2. ✖ a straight line

3. ✖ a rectangular hyperbola

4. ✖ an exponentially decaying function

Question Number : 136 Question Id : 54947029033 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, the number of SCRs conducting during overlap is

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 137 Question Id : 54947029034 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 fully controlled thyristor converter is used to obtain an average voltage of 180 V with a 10 A constant current to feed a DC load. It is supplied from a single phase AC supply of 240 V, 50 Hz. Neglect the source impedance. The power factor of AC mains is _____.

Options :

1. ✔ 0

2. ✘ 0.5

3. ✘ 0.75

4. ✘ 1

Question Number : 138 Question Id : 54947029035 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 both frequency and voltage can be controlled?

Options :

1. ✘ Inverter and AC voltage controller

2. ✘ Inverter, cycloconverter and AC voltage controller

3. ✔ Inverter and cycloconverter

4. ✖ cycloconverter and AC voltage controller

Question Number : 139 Question Id : 54947029036 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A three phase six pulse full converter works as a ac to dc converter for firing angles
in the range

Options :

1. ✖ $\alpha > 90$

2. ✖ $90 < \alpha < 180$

3. ✔ $0 < \alpha < 90$

4. ✖ $0 < \alpha < 360$

Question Number : 140 Question Id : 54947029037 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A PWM switching scheme is used with a three phase inverter to

Options :

1. ✖ Reduce the total harmonic distortion with modest filtering

2. ✖   Minimize the load on DC side

3. ✖   Increase the life of the batteries

4. ✔   Reduce low order harmonics and increase high order harmonics