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 :	Physics 18th 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 :	549470372
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 : 54947026461 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most expected immediate outcome of teaching is

Options :

Changes in the behaviour of students in desirable direction

1. ✔

Development of total personality of students

2. ✖

Building characters of the students

3. ✖

Getting selected for a suitable job

4. ✖

Question Number : 2 Question Id : 54947026462 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Good teaching is best reflected by

Options :

Attendance of students

1. ✖

Number of distinctions

2. ✖

Meaningful questions asked by students

3. ✔

Pin-drop silence in the class

4. ✖

Question Number : 3 Question Id : 54947026463 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Listening to a lecture is basically

Options :

Informational listening

1. ✖

Evaluative listening

2. ✔

Emphatic listening

3. ✖

Dynamic Listening

4. ✖

Question Number : 4 Question Id : 54947026464 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 characteristic of a slow learner?

Options :

Limited vocabulary

1. ✖

Short span of attention

2. ✖

Abstract thinking

3. ✔

Limited range of interests

4. ✖

Question Number : 5 Question Id : 54947026465 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Dynamic approach to teaching means

Options :

Teaching should be forceful and effective

1. ✖

Teachers should be energetic and dynamic

2. ✖

The topics of teaching should not be static, but dynamic

3. ✖

The students should be required to learn through activities

4. ✔

For an efficient and durable learning, learner should have

Options :

1. ✖ Ability to learn only

2. ✖ Requisite level of motivation only

3. ✖ Opportunities to learn only

4. ✔ Desired level of ability and motivation

National Literacy Mission was established in

Options :

1. ✖ 1996

1988

2. ✔

1999

3. ✘

2000

4. ✘

Question Number : 8 Question Id : 54947026468 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Research can be conducted by a person who

Options :

Has studied research methodology

1. ✘

Holds a postgraduate degree

2. ✘

Possesses thinking and reasoning ability

3. ✔

Is a hard worker

4. ✖

Question Number : 9 Question Id : 54947026469 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 research specifically requires objectivity to discover facts and causes from the data gathered for the purpose?

Options :

Quantitative research

1. ✔

Fundamental research

2. ✖

Qualitative research

3. ✖

Action research

4. ✖

Question Number : 10 Question Id : 54947026470 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The classification of studies into exploratory, descriptive, analytical, or predictive research is based on

Options :

Logic of the research

1. ✖

Outcome of the research

2. ✖

Process of the research

3. ✖

Purpose of the research

4. ✔

Question Number : 11 Question Id : 54947026471 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which type of study will be preferred by a researcher to estimate the degree of relationship between the level of education and achievement motivation?

Options :

Naturalistic

1. ✖

Inventory

2. ✖

Correlational

3. ✔

Experimental

4. ✖

Question Number : 12 Question Id : 54947026472 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Good research ethics means

Options :

Not disclosing the holdings of shares or stocks in a company that sponsors your research

1. ✖

Assigning a particular research problem to one PhD or research student only

2. ✔

Discussing with your colleagues confidential data from a research paper that you are reviewing for an academic journal

3. ✖

Submitting the same research manuscript for publishing in more than one journal

4. ✖

Question Number : 13 Question Id : 54947026473 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A research paper

Options :

is a compilation of information on a topic

1. ✖

contains original research as deemed by the author

2. ✖

contains peer-reviewed original research or the evaluation of research conducted by others.

3. ✔

can be published in more than one journal.

4. ✖

Question Number : 14 Question Id : 54947026474 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Manipulation is always a part of

Options :

Historical research

1. ✖

Fundamental research

2. ✖

Descriptive research

3. ✖

Experimental research

4. ✔

Is Section Default? : null

Question Id : 54947026475 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:

Ecosystems provide people with a variety of goods and services, food, clean water, clean air, flood control, soil stabilization, pollination, climate regulation, spiritual fulfilment, and aesthetic enjoyment, to name just a few. Most of these benefits are either irreplaceable or the technology necessary to replace them is prohibitively expensive. For example, potable freshwater can be provided by desalinating sea water, but only at great cost.

The rapidly expanding human population has greatly modified the earth's ecosystem to meet their increased requirements of some of the goods and services, particularly food, freshwater, timber, fibre, and fuel. These modifications have contributed substantially to human well being and economic development. However, the benefits have not been equally distributed. Some people have actually been harmed by these changes. Moreover, short-term increases in some ecosystems' goods and services have come at the cost of long-term degradation of others. For example, efforts to increase the production of food and fibre have decreased the ability of some ecosystems to provide clean water, regulate flooding, and support biodiversity.

Sub questions

Question Number : 15 Question Id : 54947026476 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Expanding human population has an adverse effect on

(A) Spiritual fulfilment

(B) Availability of potable freshwater

(C) Employment

(D) Biodiversity

Which of the statements given above are correct?

Options :

(A), (B), and (C)

1. ✖

(B), (C), and (D)

2. ✖

(B) and (D)

3. ✔

All of the above

4. ✖

Question Number : 16 Question Id : 54947026477 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The passage mentions that 'some people have actually been harmed by these changes'. It indicates towards

Options :

Inequitable distribution of benefit

1. ✖

Decrease in the ability of some ecosystems to provide clean water, regulate flooding, and support biodiversity

2. ✖

Both (1) and (2)

3. ✔

Neither (1) nor (2)

4. ✖

Question Number : 17 Question Id : 54947026478 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 correct in the context of the passage?

Options :

1. ✔ The rapid expansion of population has adversely affected some people

2. ✘ Sufficient efforts have not been made to increase the production of food and fibre

3. ✘ In short term, some people may be harmed, but in long term, everyone will benefit from modifications in earth's ecosystem

4. ✘ No answer

Question Number : 18 Question Id : 54947026479 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

With reference to the passage, consider the following statements:

(A) It is imperative to modify the earth's eco-system for the well-being of mankind

(B) Technology can never replace all the goods and services provided by ecosystems

Which of the statements given above is/are correct?

Options :

Only (A)

1. ✖

Only (B)

2. ✔

Both (A) and (B)

3. ✖

Neither (A) nor (B)

4. ✖

Question Number : 19 Question Id : 54947026480 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to the passage, which of the following can be taken as the main reason for modification of earth's ecosystem?

Options :

Technology

1. ✖

Increasing population

2. ✔

Lack of an integrated approach

3. ✖

No answer

4. ✖

Question Number : 20 Question Id : 54947026481 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 :

Modification of our ecosystem

1. ✔

Our natural resources

2. ✖

Harmful effect of increase in human population

3. ✖

Human interference in our ecosystem

4. ✖

Question Number : 21 Question Id : 54947026482 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

With reference to the passage, consider the following statements:

(A) Technology driven ecosystems are alternate means of future needs

(B) Technology helps in improving ecosystems on short term basis but at the cost of long term eco-degradation

Which of the statements given above is/are correct?

Options :

1. ✖   Only (A)

2. ✖   Only (B)

3. ✔   Both (A) and (B)

4. ✖   Neither (A) nor (B)

Is Section Default? :   null

Question Number : 22 Question Id : 54947026483 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The essential components of communication are

Options :

Source, message, interference, channel, receiver, feedback, and context

1. ✔

Sign, source, destination, interaction, and correlation

2. ✘

Signs, symbols, understanding, communication, and communicant

3. ✘

Symbols, understanding, purpose, ideas, opinions, non-verbal, and reaction

4. ✘

Question Number : 23 Question Id : 54947026484 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Another term used for interpersonal communication is

Options :

Group communication

1. ✘

Face-to-face public communication

2. ✖

Dyadic communication

3. ✔

Traditional communication

4. ✖

Question Number : 24 Question Id : 54947026485 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Communication in the class fails because

Options :

The students are inattentive

1. ✖

The teacher is monotonous in delivering the message

2. ✔

The students have no interest in the lesson being taught

3. ✖

There is very much noise in and around the classroom

4. ✖

Question Number : 25 Question Id : 54947026486 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ability to understand, communicate with, motivate, and support other people, both individually and in groups, define which of the following organizational skills?

Options :

Hard skills

1. ✖

Soft skills

2. ✔

Conceptual skills

3. ✖

Political skills

4. ✖

Question Number : 26 Question Id : 54947026487 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In India for broadcasting TV programmes which system is followed?

Options :

1. ✖ NTCS

2. ✔ PAL

3. ✖ NTSE

4. ✖ SECAM

Question Number : 27 Question Id : 54947026488 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the process of communication, which one of the following is in the chronological order?

Options :

1. ✖ Communication, medium, receiver, effect message

Medium, communicator, message, receiver, effect

2. ✖

Communicator, message, medium, receiver, effect

3. ✔

Message, communicator, medium, receiver, effect

4. ✖

Question Number : 28 Question Id : 54947026489 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Communication between two or more people is called

Options :

Organizational communication

1. ✖

Interpersonal communication

2. ✔

Extrapersonal communication

3. ✖

Intrapersonal communication
4. ✖

Question Number : 29 Question Id : 54947026490 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

1, 8, 27, 64, 125, 216, …

Options :

1. ✖
256

2. ✔
343

3. ✖
365

4. ✖
400

Question Number : 30 Question Id : 54947026491 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

ABD, CDF, …, GHJ, IJL

Options :

EFH

1. ✔

IJL

2. ✖

HIJ

3. ✖

HIK

4. ✖

Question Number : 31 Question Id : 54947026492 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 'SELDOM' is coded as '1 2 4 3 6 5', how will you code 'MODE'?

Options :

3 6 2 1

1. ✖

6 2 3 1

2. ✖

5 6 3 2

3. ✔

6 2 1 3

4. ✖

Question Number : 32 Question Id : 54947026493 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. ✖

Father-in-law

3. ✖

Brother-in-law

4. ✔

Question Number : 33 Question Id : 54947026494 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Raman travels a distance of 5 km in south direction. He turns to his right. After walking 3 km, he turns to the left and walks 5 km. Now in which direction is he from the starting place?

Options :

West

1. ✖

South

2. ✖

South-west

3. ✔

North-east

4. ✖

Question Number : 34 Question Id : 54947026495 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

P, Q, R, S, and T are sitting in a straight line facing north. P sits next to S but not to T. Q is sitting next to R, who sits on the extreme left corner. T does not sit next to Q. Who sits to the left of S?

Options :

1. ✔
P

2. ✖
Q

3. ✖
R

4. ✖
S

Question Number : 35 Question Id : 54947026496 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The year next to 1991 will have the same calendar as that of the year 1991.

Options :

1. ✖
1992

2. ✖
1995

3. ✖
1996

1997

4. ✔

Question Number : 36 Question Id : 54947026497 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A disjunctive proposition is a type of

Options :

Conditional proposition

1. ✔

Unconditional proposition

2. ✖

Categorical proposition

3. ✖

Imperative proposition

4. ✖

Question Number : 37 Question Id : 54947026498 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

'Honesty is the best policy' because

Options :

1. ✖ God rewards those who follow this maxim

2. ✖ It leads to recognition in the society

3. ✔ It facilitates cohesiveness in society

4. ✖ It leads to material prosperity and spiritual awakening

Question Number : 38 Question Id : 54947026499 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 four conclusions numbered I, II, III, and IV. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follow from the given statements.

Statements:

Some tables are TVs.

Some TVs are radios.

Conclusions:

I. Some tables are radios.

II. Some radios are tables.

III. All radios are TVs.

IV. All TVs are tables.

Options :

Only I and III follow

1. ✖

Only II and IV follow

2. ✖

All follow

3. ✖

None follows

4. ✔

Given below are two statements followed by four conclusions numbered I, II, III, and IV. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follow from the given statements.

Statements:

All branches are flowers

All flowers are trees.

Conclusions:

I. All branches are trees.

II. All trees are branches.

III. All flowers are branches.

IV. Some trees are branches.

Options :

Only I and IV follow

1. ✔

Only II and III follow

2. ✖

All follow

3. ✖

None follows

4. ✖

Question Number : 40 Question Id : 54947026501 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 voluntary provisions in the 73rd Constitutional Amendment Act (1992)?

I.   Minimum age of 21 for contesting elections to Panchayats

II.   Indirect elections to the post of Chairperson Panchayats at the intermediate and district levels.

III.   Representation of Members of Parliament and State Legislature on Panchayati Raj institutions

IV.   Reservation of seats for backward classes.

Select the correct answer from the code given below.

Options :

I, II, and IV

1. ✖

II, III, and IV

2. ✖

I, II, and III

3. ✖

III and IV

4. ✔

Question Number : 41 Question Id : 54947026502 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the statement 'some men are honest' is false, which among the following statements will be true? Choose the correct code given below.

(i) All men are honest.

(ii) No men are honest.

(iii) Some men are not honest.

(iv) All men are dishonest.

Options :

(i), (ii) and (iii)

1. ✔

(ii), (iii) and (iv)

2. ✖

(i), (iii) and (iv)

3. ✖

(ii), (i) and (iv)

4. ✖

Question Number : 42 Question Id : 54947026503 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 premises.

Premises:

(i) All saints are religious. (major)

(ii) Some honest persons are saints. (minor)

Four conclusions are drawn from those two premises in four codes. Select the code that states the conclusion validly drawn.

Options :

All saints are honest.

1. ✖

Some saints are honest.

2. ✖

Some honest persons are religious.

3. ✔

All religious persons are honest.

4. ✖

Is Section Default? :   null

Question Id : 54947026504 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 pie chart given below and answer questions 43, 44 and 45. It gives the breakup of expenses incurred in publishing a book.
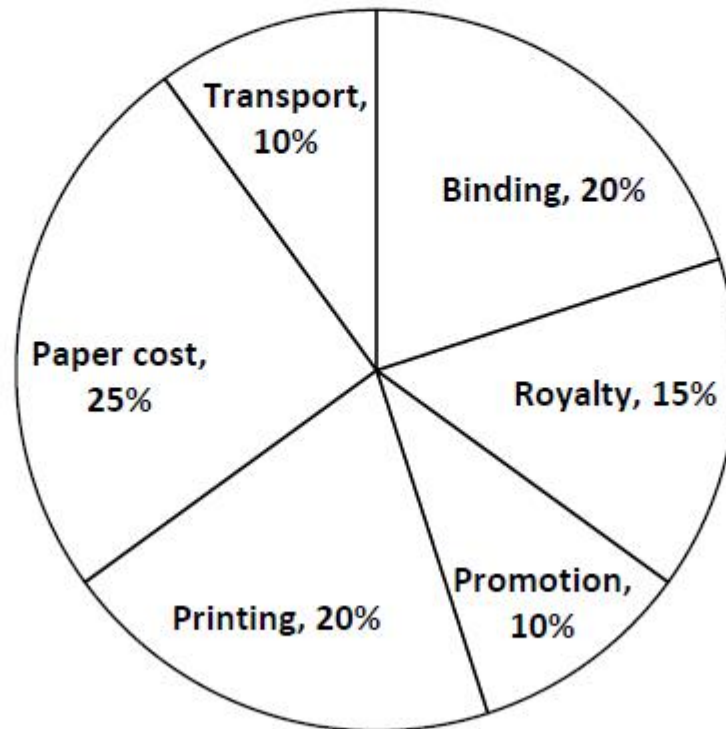
Sub questions

Question Number : 43 Question Id : 54947026505 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the cost price of the book is Rs.150, then what is the combined printing and binding cost for a single copy of the book?

Options :

1. ✔   60

2. ✖   75

3. ✖   80

4. ✖   85

Question Number : 44 Question Id : 54947026506 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 central angle of the sector corresponding to the expenditure incurred on royalty?

Options :

1. ✖   48°

2. ✔   54°

3. ✘   60°

4. ✘   72°

Question Number : 45 Question Id : 54947026507 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 difference between promotion and printing cost in rupees if we assume that total cost is Rs.200

Options :

1. ✘   10

2. ✔   20

3. ✘   30

4. ✘   40

Question Id : 54947026508 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 questions 46–49. It consists of data on the number of candidates who appeared from five schools in the board exams over 2004–2008.

Year	Schools				
	A	B	C	D	E
2004	650	760	820	800	780
2005	700	740	860	780	740
2006	800	820	940	750	730
2007	750	880	920	840	790
2008	850	840	900	860	770

Sub questions

Question Number : 46 Question Id : 54947026509 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 number of students who appeared from School B for all the years?

Options :

676
1. ✖

787
2. ✖

808
3. ✔

818
4. ✖

Question Number : 47 Question Id : 54947026510 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of students who appeared in 2006 from School A is what percent of the total number of students who appeared from School A for all the years together?

Options :

25.25
1. ✖

21.33
2. ✔

22.45

3. ✖

23.45

4. ✖

Question Number : 48 Question Id : 54947026511 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 ratio between the total numbers of students who appeared in 2004 and
2005 from Schools C and D, respectively?

Options :

84 : 79

1. ✔

79 : 84

2. ✖

84 : 89

3. ✖

89 : 84

4. ✖

Question Number : 49 Question Id : 54947026512 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 number of students who appeared from the given schools in 2007?

Options :

825

1. ✖

836

2. ✔

845

3. ✖

863

4. ✖

Is Section Default? :   null

Question Number : 50 Question Id : 54947026513 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The concept of connect intelligence is derived from

Options :

Virtual reality

1. ✖

Fuzzy logic

2. ✖

Bluetooth technology

3. ✖

Value-added networks

4. ✔

Question Number : 51 Question Id : 54947026514 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Programs designed to perform specific tasks are known as

Options :

System software

1. ✖

Application software

2. ✔

Utility programs

3. ✖

Operating system

4. ✖

Question Number : 52 Question Id : 54947026515 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 network device?

Options :

Router

1. ✖

Switch

2. ✖

Hub

3. ✖

CPU

4. ✔

Question Number : 53 Question Id : 54947026516 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 search engine?

Options :

Macromedia Flash

1. ✖

Google

2. ✔

Netscape

3. ✖

Librarians' Index to the Internet

4. ✖

Question Number : 54 Question Id : 54947026517 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

FTP stands for

Options :

Full Text Processing

1. ✖

File Transfer Program

2. ✖

File Transfer Process

3. ✖

File Transfer Protocol

4. ✔

Question Number : 55 Question Id : 54947026518 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wired Ethernet is basically

Options :

ADSL

1. ✖

ISDN

2. ✔

Broadband

3. ✖

The Internet

4. ✖

Question Number : 56 Question Id : 54947026519 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Eklavya Technology channel, started in 2003, is a distant-learning joint initiative between

Options :

IIT and IGNOU

1. ✔

IIIT and IGNOU

2. ✖

UGC and AICTE

3. ✖

IIT and AICTE

4. ✖

Question Number : 57 Question Id : 54947026520 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 gas affects human health by reducing blood's ability to carry

oxygen to different parts of the body?

Options :

Carbon monoxide

1. ✔

Sulphur dioxide

2. ✖

Carbon dioxide

3. ✖

Nitrous dioxide

4. ✖

Question Number : 58 Question Id : 54947026521 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Acid rain is formed by the

Options :

Combination of chemical air pollutants with atmospheric water droplets

1. ✔

Mixing of acid with rain

2. ✖

Release of industrial pollutants in the atmosphere

3. ✖

No answer

4. ✖

Question Number : 59 Question Id : 54947026522 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Best extinguisher for inflammable materials is

Options :

Water

1. ✖

SO_2

2. ✖

CO_2

3. ✔

CO

4. ✖

Question Number : 60 Question Id : 54947026523 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Nuclear fusion reactions happens spontaneously in

Options :

The core of the earth

1. ✖

The commercial nuclear reactor

2. ✖

The atmosphere of the sun

3. ✔

The eruption of a volcano

4. ✖

Question Number : 61 Question Id : 54947026524 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The tallest trees in the world are found in the

Options :

Equatorial region

1. ✔

Temperate region

2. ✖

Monsoon region

3. ✖

Mediterranean region

4. ✖

Question Number : 62 Question Id : 54947026525 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 element is used in the making of solar cells?

Options :

Platinum

1. ✖

Carbon

2. ✖

Silicon

3. ✔

Silver

4. ✖

Question Number : 63 Question Id : 54947026526 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Organic food is supposed to be better for human health as

Options :

It is raised on special chemicals

1. ✖

It is more expensive

2. ✖

It is grown without the use of artificial fertilizers and pesticides

3. ✔

No answer

4. ✖

Question Number : 64 Question Id : 54947026527 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Ministry of Human Resource Development was created in the year

Options :

1. ✖ 1972

2. ✖ 1980

3. ✔ 1985

4. ✖ 1991

Question Number : 65 Question Id : 54947026528 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 agency or institution proposed introduction of India Education Index (IEI) for ranking institutes based on academic, research, performance, and other parameters?

Options :

1. ✖ AICTE

2. ✔ NAAC

UGC

3. ✖

IIT-Delhi

4. ✖

Question Number : 66 Question Id : 54947026529 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

India, that is Bharat, shall be a union of states. The states and the territories, thereof, shall be as specified in the

Options :

First Schedule

1. ✔

Second Schedule

2. ✖

Third Schedule

3. ✖

No answer

4. ✖

Question Number : 67 Question Id : 54947026530 Display Question Number : Yes Is Question Mandatory : No Calculator : None

How do Directive Principles of State Policy differ from Fundamental Rights?

Options :

The former are meant for UTs, whereas the latter are for states.

1. ✖

The former are not enforceable, whereas the latter are enforceable.

2. ✔

The former are not a part of the constitution, whereas the latter are the part of the constitution.

3. ✖

No answer

4. ✖

Question Number : 68 Question Id : 54947026531 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum strength of Lok Sabha and Rajya Sabha, respectively, is

Options :

552 and 250

1. ✖

537 and 275

2. ✖

525 and 238

3. ✖

545 and 250

4. ✔

Question Number : 69 Question Id : 54947026532 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which subject was transferred from state list to Concurrent List by the 42nd amendment of the constitution?

Options :

Agriculture

1. ✖

Education

2. ✔

Irrigation

3. ✖

Local self-government

4. ✖

Who is the highest Law Officer of a state?

Options :

Attorney General

1. ✖

Advocate General

2. ✔

Solicitor General

3. ✖

Secretary General

4. ✖

Physics

Section Id :	549470373
Section Number :	2
Mandatory or Optional :	Mandatory

Question Number : 71 Question Id : 54947026534 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

1. The constant p for which $\vec{A} \times \vec{B} = \vec{C}$, Where

$$\vec{A} = \hat{\imath} + 3\hat{k}$$
$$\vec{B} = \hat{\imath} + p\hat{\jmath} - 2\hat{k}$$
$$\vec{C} = -6\hat{\imath} + 5\hat{\jmath} + 2\hat{k}$$

Options :

1. ✖   1

2. ✖   −2

3. ✖   −1

4. ✔   2

The solution of $(D^2 - 5D + 6)y = 0$ is

Options :

1. ✖ $y = c_1 e^{-2x} + c_2 e^{3x}$

2. ✔ $y = c_1 e^{2x} + c_2 e^{3x}$

3. ✖ $y = c_1 e^{2x} + c_2 e^{-3x}$

4. ✖ $y = c_1 e^{-2x} + c_2 e^{-3x}$

If $e^0 = 1$, $e^1 = 2.72$, $e^2 = 7.39$, $e^3 = 20.09$ and $e^4 = 54.60$ then Simpson's $\frac{1}{3}$ rule, then the value of $\int_0^4 e^x \, dx$ is

Options :

1. ✖   52.78

53.87

2. ✔

54.87

3. ✖

52.87

4. ✖

Question Number : 74 Question Id : 54947026537 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The amount of flux diverging from a point per unit area per second is called

Options :

Divergence of a scalar field

1. ✖

Divergence of a vector field

2. ✔

Gradient of a scalar field

3. ✖

Gradient of a vector field

4. ✖

The residue of cot z at z=0

Options :

-1

1. ✖

1

2. ✔

π

3. ✖

¼ sin h

4. ✖

The curl of a vector field can be represented as

Options :

Curl A

1. ✖

$$\vec{\nabla} \times \vec{A}$$

2. ✔

$$\vec{\nabla}.\vec{A}$$

3. ✖

$$\vec{\nabla}\vec{A}$$

4. ✖

Question Number : 77 Question Id : 54947026540 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rank of the matrix

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 & 5 \\ 4 & 5 & 6 \end{bmatrix}$$

Options :

0

1. ✖

2. ✖

1

3. ✖

3

4. ✔

2

Question Number : 78 Question Id : 54947026541 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A rod has length 200 cm, when the rod is in a satellite moving with velocity that is half of the velocity of light relative to the laboratory, then the length of the rod in laboratory is

Options :

1. ✔

173.2 cm

2. ✖

172.3 cm

3. ✖

173.4 cm

174.3 cm

4. ✖

The Lagrangian of a particle of mass 'm' moving in a plane is given by

$$L = \frac{1}{2} m(V_x^2 + V_y^2) + a(xV_x + yV_y)$$

where V_x, V_y are velocity components and 'a' is a constant then the canonical momenta of the particle are

Options :

$$p_x = mv_x + ax \text{ and } p_y = mv_y + ay$$

1. ✖

$$p_x = mv_x - a_x \text{ and } p_y = mv_y + ay$$

2. ✖

$$p_x = mv_x + ax \text{ and } p_y = mv_y - ay$$

3. ✔

$$p_x = mv_x - a_x \text{ and } p_y = mv_y - ay$$

4. ✖

Question Number : 80 Question Id : 54947026543 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Poisson bracket between θ and $\theta°$ is

Options :

$$\{\theta, \theta°\} = \frac{1}{ml^2}$$

1. ✔

$$\{\theta, \theta°\} = \frac{1}{2}$$

2. ✖

$$\{\theta, \theta°\} = \frac{g}{l}$$

3. ✖

$$\{\theta, \theta°\} = 1$$

4. ✖

Question Number : 81 Question Id : 54947026544 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a coordinate corresponding to a rotation is cyclic, rotation o the system about given axis remains invariant then the following quantity is conserved

Options :

Linear momentum

1. ✖

Angular momentum

2. ✔

Kinetic energy

3. ✖

Potential energy

4. ✖

Question Number : 82 Question Id : 54947026545 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An astronaut moves in a super spaceship travelling at a speed of 0.8c. The astronaut observes a photon approaching him from space. The speed of photon with respect to the astronaut is

Options :

1.8c

1. ✖

c

2. ✔

0.2c

3. ✖

0.9c

4. ✖

Question Number : 83 Question Id : 54947026546 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A particle of mass m, charge q and initial velocity v collides head on with an identical particle initially at rest. The distance of closes approach will be (r = ?)

Options :

1. ✖ $\dfrac{q^2}{mv^2}$

2. ✖ $\dfrac{2q^2}{mv^2}$

3. ✖ $\dfrac{3q^2}{mv^2}$

$$\frac{4q^2}{mv^2}$$

4. ✔

Question Number : 84 Question Id : 54947026547 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A planet is revolving around a star in an elliptical orbit. The ratio of the farthest distance to the closest distance of the planet from the star is 4. The ratio of kinetic energies of the planet at the farthest to the closest position is

Options :

1:16

1. ✔

16:1

2. ✖

1:4

3. ✖

4:1

4. ✖

Question Number : 85 Question Id : 54947026548 Display Question Number : Yes Is Question Mandatory : No Calculator : None

The electric field $\vec{E}$ at the center of a uniformly charged conductor is

Options :

1. 0 ✔

2. 1 ✖

3. π ✖

4. ∞ ✖

Question Number : 86 Question Id : 54947026549 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 Maxwell's equations implies the absence of magnetic monopoles?

Options :

1. $\nabla.E = \dfrac{\rho}{\epsilon_0}$ ✖

$$\nabla . B = 0$$

2. ✔

$$\nabla X E = -\frac{\partial B}{\partial t}$$

3. ✘

$$\nabla X B = \left(\frac{1}{c^2}\right)\frac{\partial B}{\partial t} + \mu_0 J$$

4. ✘

Question Number : 87 Question Id : 54947026550 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The momentum of an electron (mass m) which has the same kinetic energy as its rest mass energy is

Options :

$\sqrt{3}\ mc$

1. ✔

$\sqrt{2}\ mc$

2. ✘

mc

3. ✘

4. ✖ $mc \, /\sqrt{2}$

Question Number : 88 Question Id : 54947026551 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The direction of propagation of electromagnetic wave is given by

Options :

1. ✖ $\bar{E} \cdot \bar{B}$

2. ✖ $\bar{E}$

3. ✖ $\bar{B}$

4. ✔ $\bar{E} X \bar{B}$

Question Number : 89 Question Id : 54947026552 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a negative charge is placed at the centre of the sphere, then the direction of electric field on the Gaussian surface is

Options :

1. ✖   Radially outward

2. ✔   Radially inward

3. ✖   Along the tangent to the surface

4. ✖   None of these

Question Number : 90 Question Id : 54947026553 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The magnetic field due to a long straight current carrying conductor of radius R, when $r > R$ [$r \rightarrow$ distance between the point and the axis of wire] proportional to

Options :

1. ✖ r

2. ✔ r^{-1}

3. ✖ r^2

4. ✖ r^{-2}

In Rayleigh scattering, the amount of scattered light is proportional to

Options :

1. ✖ $\dfrac{1}{\lambda}$

2. ✖ $\dfrac{1}{\lambda^2}$

3. ✖ $\dfrac{1}{\lambda^3}$

$$\frac{1}{\lambda^4}$$

4. ✔

Commutation relation for $[x, p_x^2]$ is

Options :

$$2i\hbar p_x$$

1. ✔

$$4i\hbar p_x$$

2. ✘

$$-2i\hbar p_x$$

3. ✘

$$-4i\hbar p_x$$

4. ✘

The expectation value $\langle x \rangle$ of a wave function $\varphi(x) = e^{-\alpha x^2}$ is

Options :

1. ✗ $2e^{-ax^2}$

2. ✗ 1

3. ✗ xe^{-2ax^2}

4. ✔ 0

Question Number : 94 Question Id : 54947026557 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In accordance with Heisenberg's uncertainty principle which of the following is a proper relation?

Options :

1. ✗ $\Delta x \times \Delta p \leq \dfrac{h}{4\pi}$

2. ✗ $\Delta x \times \Delta p = \dfrac{h}{4\pi}$

$$\Delta x \times \Delta p \geq \frac{h}{4\pi}$$

3. ✔

$$\Delta x \times \Delta v \leq \frac{h}{4\pi}$$

4. ✖

Question Number : 95 Question Id : 54947026558 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Laser is light source which give almost perfectly parallel beam of high intensity. If a 2K watt laser beam is concentrated by a lens into cross-sectional area about 10^{-6} cm² then the value of Poynting vector is

Options :

2×10^{11} W/m²

1. ✖

2×10^{12} W/m²

2. ✖

2×10^{13} W/m²

3. ✔

2×10^{14} W/m²

4. ✖

A charge q is located at the centre of a hypothetical cube. The electric flux through any face of the cube is

Options :

$q / 2\varepsilon_0$

1. ✖

$q / 4\varepsilon_0$

2. ✖

q / ε_0

3. ✖

$q / 6\varepsilon_0$

4. ✔

The phase velocity (v_p) and the group velocity (v_g) of a de Broglie wave in free space (speed of light $= c$) are related as

Options :

1. ✖

$$\frac{v_p}{v_g} = \sqrt{2}$$

2. ✖

$$v_p\, v_g = \sqrt{2}\, c^2$$

3. ✖

$$\frac{v_p}{v_g} = 0.5$$

4. ✔

$$v_p\, v_g = c^2$$

Question Number : 98 Question Id : 54947026561 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The commutation relation for the operator x and $\dfrac{d}{dx}$ gives

Options :

1. ✖   0

2. ✖   1

3. ✔   −1

4. ✖   2

Question Number : 99 Question Id : 54947026562 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The zero-point energy of harmonic oscillator is

Options :

1. ✖ $\hbar\omega$

2. ✔ $\dfrac{1}{2}\hbar\omega$

$2\hbar\omega$

3. ✖

$\dfrac{1}{4}\hbar\omega$

4. ✖

Which of the following is not a Fermion?

Options :

Electrons

1. ✖

Muons

2. ✖

Neutrons

3. ✖

Photon

4. ✔

Question Number : 101 Question Id : 54947026564 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wave function could be _____ valued.

Options :

1. ✔ Single

2. ✖ Double

3. ✖ Triple

4. ✖ None

Question Number : 102 Question Id : 54947026565 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The uncertainty in the location of a particle is equal to de-Broglie wavelength then the uncertainty in its velocity is

Options :

1. ✔ v

2. ✖ $v/2$

3. ✖ $2v$

4. ✖ $(3/2)v$

Energy eigen values of hydrogen atom are proportional to

Options :

1. ✖ n^2

2. ✖ n

3. ✖ $1/n^2$

4. ✔ $-1/n^2$

According to Debye's theory of specific heat at high temperature specific heat is proportional to

Options :

1. ✖   T

2. ✖ T^2

3. ✖ T^3

4. ✔   Independent of T

A black body is at temperature of 527 K. To radiate twice as much energy per second, its temperature must be increased to value

Options :

1. ✖   1600 K

951 K

2. ✔

200 K

3. ✘

12800 K

4. ✘

Question Number : 106 Question Id : 54947026569 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a certain JFET, $I_{GSS} = 10 \, nA$ at $V_{GS} = 10 \, V$. The input resistance is

Options :

$R_{in} = 10^3 \, M\Omega$

1. ✔

$R_{in} = 10^{-3} \, M\Omega$

2. ✘

$R_{in} = 10^6 \, M\Omega$

3. ✘

$$R_{in} = 10^{-6} \ M\Omega$$

4. ✖

Question Number : 107 Question Id : 54947026570 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Digital circuit can be made by repetitive use of

Options :

    AND Gates

1. ✖

    NOR Gates

2. ✖

    OR Gates

3. ✖

    NAND Gates

4. ✔

Question Number : 108 Question Id : 54947026571 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In order to obtain the Zener effect, Zener diode has to be

Options :

Reverse biased

1. ✔

Forward biased

2. ✘

Connected to resistance

3. ✘

Exposed to solar power

4. ✘

Question Number : 109 Question Id : 54947026572 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When operated in cut off and saturation, the transistor acts like a

Options :

linear amplifier

1. ✘

switch

2. ✔

variable capacitor

3. ✖

variable resistor

4. ✖

Question Number : 110 Question Id : 54947026573 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a microprocessor, the resistor which holds the address of the next instruction to be fetched is

Options :

Accumulator

1. ✖

Program counter

2. ✔

Stack counter

3. ✖

Instructor register

4. ✖

Question Number : 111 Question Id : 54947026574 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Wien bridge oscillator's positive feedback circuit is

Options :

1. ✖ RL circuit

2. ✖ LC circuit

3. ✖ A Voltage divider

4. ✔ A lead lag circuit

Question Number : 112 Question Id : 54947026575 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The mobility of an electron in a conductor is expressed in terms of

Options :

1. ✔ cm^2/V-s

2. ✖ Cm/V-s

cm^2/V

3. ✖

Cm^2/s

4. ✖

Question Number : 113 Question Id : 54947026576 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A 0-300 V voltmeter has an error of ± 2 % of full-scale deflection. What would be the range of readings if true voltage is 30 V?

Options :

24 V to 36 V

1. ✔

29.4 V to 30.6 V

2. ✖

20 V to 40 V

3. ✖

25 V to 36 V

4. ✖

Question Number : 114 Question Id : 54947026577 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Serial input data of 8085 can be loaded into bit 7 of the accumulator by

Options :

1. ✔ Executing a RIM instruction

2. ✖ Execution RSTI

3. ✖ Using TRAP

4. ✖ Using INTRI

Question Number : 115 Question Id : 54947026578 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Registers are built by using

Options :

1. ✖ Transistor

Gates

2. ✖

Flip-flops

3. ✔

Capacitors

4. ✖

Question Number : 116 Question Id : 54947026579 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Optical storage devices employ

Options :

Ultraviolet light

1. ✖

Electromagnetic fields

2. ✖

Optical couplers

3. ✖

Lasers

4. ✔

Question Number : 117 Question Id : 54947026580 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

While selecting a transducer for a particular application

Options :

1. ✖ only the input characteristics should be considered

2. ✖ only the output characteristics should be considered

3. ✖ only the transfer characteristics should be considered

4. ✔ input, output transfer characteristics should be considered

Question Number : 118 Question Id : 54947026581 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A resistance photometer is a

Options :

1. ✖ First order instrument

Zero order instrument

2. ✔

Second order instrument

3. ✖

Third order instrument

4. ✖

Question Number : 119 Question Id : 54947026582 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the confidence level is 0.95 then the values lying outside the confidence interval
are

Options :

1 in 5

1. ✖

1 in 20

2. ✔

1 in 100

3. ✖

1 in 1000

4. ✖

The spectral term for $L = 1$ and $S = \frac{1}{2}$ is given by

Options :

1. ✔
$2P_{3/2}$

2. ✖
$2S_{3/2}$

3. ✖
$2P_{1/2}$

4. ✖
$2S_{1/2}$

The splitting of spectral line in the presence of an electric field is called as

Options :

Zeeman Effect

1. ✖

Raman Effect

2. ✖

Stark Effect

3. ✔

Scattering

4. ✖

Question Number : 122 Question Id : 54947026585 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum number of electrons in Subshell is _____.

Options :

n^2

1. ✖

$2n^2$

2. ✔

$2n$

3. ✖

4. ✖ *n*

In a Stern-Gerlach experiment the atomic beam whose angular momentum state is to be determined, must travel through

Options :

1. ✖ Homogeneous radio frequency magnetic field

2. ✖ Homogeneous static magnetic field

3. ✔ Inhomogeneous static magnetic field

4. ✖ Inhomogeneous radio frequency magnetic field

In M.K.S units Bohr magneton is given by

Options :

$eh/4\pi m$

1. ✔

$em/4h$

2. ✖

$e/4mh$

3. ✖

$mh/2e\pi$

4. ✖

Question Number : 125 Question Id : 54947026588 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The radius of a hydrogen atom in its ground state is

Options :

10^{-4} cm

1. ✖

10^{-6} cm

2. ✖

10^{-8} cm

3. ✔

10^{-10} cm

4. ✖

Question Number : 126 Question Id : 54947026589 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The de-Broglie wavelength associated with neutrons in thermal equilibrium with matter at 300 K is

Options :

1790 Å

1. ✖

179 Å

2. ✖

17.9 Å

3. ✔

1.79 Å

4. ✖

Question Number : 127 Question Id : 54947026590 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a cation leaves its normal position in the crystal and moves to some interstitial space, the defect in the crystal is known as

Options :

1. ✔   Frenkel Defect

2. ✖   Schottky Defect

3. ✖   F – Center

4. ✖   Color Center

Question Number : 128 Question Id : 54947026591 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In diffraction pattern of BCC crystal which of the following planes are not present?

Options :

1. ✖ $(2, 0, 0)$

$(1, 1, 0)$

2. ✖

$(1, 0, 1)$

3. ✖

$(1, 1, 1)$

4. ✔

Question Number : 129 Question Id : 54947026592 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A super conductor is a perfect diamagnet with the magnet induction B = 0. This is

Options :

D C Josephson

1. ✖

Super conductor tunnelling

2. ✖

Meissner effect

3. ✔

A C Josephson effect

4. ✖

The nature of bonding for a crystal with alternate and evenly spaced positive and negative ions is

Options :

1. ✔

Ionic

2. ✖

Covalent

3. ✖

Metallic

4. ✖

Dipole

For a Type I superconductor, the surface energy is

Options :

1. ✔   Always positive

2. ✖   Always negative

3. ✖   Sometimes positive and sometimes negative

4. ✖   Depends on its T_C

Question Number : 132 Question Id : 54947026595 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

NaCl has fcc lattice with a=5.63 Å, the spacing of {100} planes is

Options :

1. ✔   2.82 Å

2. ✖   5.64 Å

3. ✖   1.41 Å

4. ✖ 4.23 Å

Question Number : 133 Question Id : 54947026596 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Laue method of X-ray diffraction by a crystal is suitable for determination of crystal orientation and symmetry and also for studying

Options :

Crystal imperfections

1. ✔
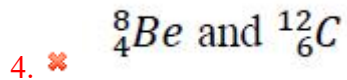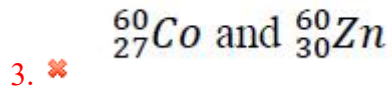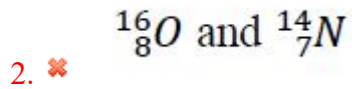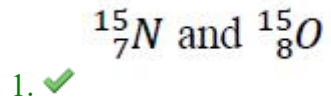
Surface Structure

2. ✖

Magnetic moment

3. ✖

Scattering from neighbouring elements in periodic table

4. ✖

Question Number : 134 Question Id : 54947026597 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 represents a pair of mirror nuclei?

Options :

1. ✔ $^{15}_{7}N$ and $^{15}_{8}O$

2. ✘ $^{16}_{8}O$ and $^{14}_{7}N$

3. ✘ $^{60}_{27}Co$ and $^{60}_{30}Zn$

4. ✘ $^{8}_{4}Be$ and $^{12}_{6}C$

Question Number : 135 Question Id : 54947026598 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Nuclear forces are

Options :

1. ✘ Long range attractive forces

2. ✔ Short range attractive forces

3. ✖   Long range repulsive forces

Short range repulsive forces
4. ✖

Question Number : 136 Question Id : 54947026599 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Negative Nuclear Quadruple moments indicates that Nucleus is

Options :

Prolate
1. ✖

Oblate
2. ✔

Spherical
3. ✖

Linear
4. ✖

Question Number : 137 Question Id : 54947026600 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Weak nuclear forces act on

Options :

1. ✔ Both hadrons and leptons

2. ✖ Hadrons only

3. ✖ All particles

4. ✖ All charged particles

Question Number : 138 Question Id : 54947026601 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A nucleus of medium mass with excess of neutrons may decay with the emission of

Options :

1. ✖ Neutron

2. ✔ Electron

Proton

3. ✖

Positron

4. ✖

Question Number : 139 Question Id : 54947026602 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 binding energy of a nucleon in the nucleus of an atom

Options :

7.8 MeV

1. ✔

7.8 KeV

2. ✖

7.8 eV

3. ✖

8.7 Mev

4. ✖

Question Number : 140 Question Id : 54947026603 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The order of magnitude of the binding Energy per nucleon in a nucleus is

Options :

10^{-5} MeV

1. ✖

10^{-3} MeV

2. ✖

0.1 MeV

3. ✖

10 MeV

4. ✔