

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 :	Chemical Sciences 17th 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 :	549470322
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 : 54947022883 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 most advantage of giving homework to students?

Options :

1. ✘
Remain busy at home
2. ✘
Study at home
3. ✘
May be checked for their progress
4. ✔
May develop the habit of self study

Question Number : 2 Question Id : 54947022884 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who is regarded as Father of Computers?

Options :

1. ✘ Pascal
2. ✘ Bill Gates
3. ✔ Charles Babbage
4. ✘ J. V. Neumen

Question Number : 3 Question Id : 54947022885 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

National literary Mission was established in the year _____.

Options :

1. ✘ 1996
2. ✔ 1988

3. ✖ 1999

4. ✖ 2000

Question Number : 4 Question Id : 54947022886 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who advocated the idea of basic education in India ?

Options :

1. ✖ Dr. Zakir Hussain

2. ✖ Dr. Rajendra Prasad

3. ✔ Mahatma Gandhi

4. ✖ Rabindranath Tagore.

Question Number : 5 Question Id : 54947022887 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The best remedy of the student's problems relating with learning is _____.

Options :

1. ✘ Suggestion for hard work
2. ✘ Supervised study in study hours
3. ✘ Suggestion for private tuition
4. ✔ Diagnostic study

Question Number : 6 Question Id : 54947022888 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Traditional teaching method is known as _____.

Options :

1. ✔ Chalk and teach
2. ✘ Brainstorming

3. ✖ Group discussion

4. ✖ Demonstration

Question Number : 7 Question Id : 54947022889 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which organization initiated the MOOCs in India?

Options :

1. ✖ CSIR

2. ✖ DST

3. ✔ AICTE

4. ✖ UGC

Question Number : 8 Question Id : 54947022890 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The conceptual framework to carry out research is known as _____ of research.

Options :

1. ✘ Objectives
2. ✘ Synopsis
3. ✔ Design
4. ✘ Hypothesis

Question Number : 9 Question Id : 54947022891 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Evaluation of the depth of any research is based on

Options :

1. ✔ Objectives
2. ✘ Time period

Money spent

3. ✖

Topic

4. ✖

Question Number : 10 Question Id : 54947022892 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which technique is used when the population is fixed or restricted to sampling?

Options :

Purpose

1. ✖

Cluster

2. ✖

Systematic

3. ✔

Stratified

4. ✖

Question Number : 11 Question Id : 54947022893 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one is considered as most comprehensive source of population data?

Options :

Sampling

1. ✘

Census

2. ✔

NSS

3. ✘

Primary Health Studies

4. ✘

Question Number : 12 Question Id : 54947022894 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following characteristic is not covered in descriptive research.

Options :

What

1. ✘

Where

2. ✘

3. ✖ When

4. ✔ Why

Question Number : 13 Question Id : 54947022895 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The basic characteristic of experimental research is _____

Options :

1. ✔ The independent variable is manipulated

2. ✖ Goals

3. ✖ A hypothesis

4. ✖ Design

Question Number : 14 Question Id : 54947022896 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 aspects, which one is not considered in research ethics?

Options :

1. ✖ Respect intellectual property
2. ✖ Objectivity
3. ✔ Cut and paste
4. ✖ Honesty

Is Section Default? : null

Question Id : 54947022897 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:

Throughout human history the leading causes of death have been infection and trauma. Modern medicine has scored significant victories against both, and the major causes of ill health and death are now the chronic degenerative disease, such as coronary artery disease, arthritis, cataract and cancer. These have a long latency period before symptoms appear and a diagnosis is made. It follows that the majority of apparently healthy people are pre-ill.

Many national surveys reveal that malnutrition is common in developing countries. This is not the calorie or micronutrient deficiency associated with developing nation; but multiple micronutrients depletion, usually combined with calorific balance or excess. The incidence and severity of Type B malnutrition will be shown to be worse if newer micronutrients groups such as the essential fatty acids and flavonoids are included in the surveys.

However, the pharmaceutical model has also created an unhealthy dependency culture, in which relatively few of us accept responsibility for maintaining our own health. Instead, we have handed over this responsibility to health professional who knows very little about health maintenance or disease prevention.

Based on pharmaceutical thinking, most intervention studies have attempted to measure the impact of a single micronutrient on the incidence of disease. The classical approach says that if you give a compound formula to test subjects and obtain positive results, you cannot know which ingredient is exerting the benefit, so you must test each ingredient individually.

So do we need to analyze each individual's nutritional status and then tailor a formula specifically for him or her? While we do not have the resources to analyze millions of individual cases and there is no need to do so. The vast majority of people are consuming suboptimal amounts of most micronutrients and most of the micronutrients concerned are very safe. Accordingly, a comprehensive and universal program of micronutrient support is probably the most cost-effective and safest way of improving the general health of the nation.

Sub questions

Question Number : 15 Question Id : 54947022898 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Type B malnutrition will be worse if

Options :

1. ✘
Micronutrients groups are included
2. ✔
Fatty acids and flavonoids are included
3. ✘
Both Micronutrients groups and Fatty acids and flavonoids are included
4. ✘
Fatty acids added

Question Number : 16 Question Id : 54947022899 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 process to know which ingredient is exerting the benefit?

Options :

1. ✘
Give compound formula to test subjects
2. ✔
Test each ingredient individually

3. ✘ Study the impact of single micronutrients

4. ✘ None of these

Question Number : 17 Question Id : 54947022900 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Pharmaceutical model created

Options :

1. ✘ Business improvement

2. ✘ Nutritional status

3. ✔ Most unhealthy dependency culture

4. ✘ None of these

Question Number : 18 Question Id : 54947022901 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is required to improve general health of the nation?

Options :

1. ✘ A comprehensive program
2. ✘ Universal program of micronutrient support system
3. ✔ All options
4. ✘ Give money to households

Question Number : 19 Question Id : 54947022902 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What does classical approach say to measure the impact of a single micronutrient on the incidence of disease?

Options :

1. ✔ You must test each ingredient individually
2. ✘ Those who know very little about health maintenance or disease prevention

A diagnosis is made

3. ✘

Test all the aspects at a time

4. ✘

Question Number : 20 Question Id : 54947022903 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Malnutrition is common in _____.

Options :

Western countries

1. ✘

South Asian countries

2. ✘

East Asian countries

3. ✘

Developing countries

4. ✔

Question Number : 21 Question Id : 54947022904 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Micronutrient support is

Options :

Most cost-effective

1. ✘

Safest

2. ✘

Both cost-effective and safest

3. ✔

Not desirable

4. ✘

Is Section Default? :

null

Question Number : 22 Question Id : 54947022905 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Encoding refers to _____.

Options :

Creating disturbance

1. ✘

Referring the message

2. ✘

3. ✓ With the assistance of symbols to express an idea

4. ✘ To interpret a message

Question Number : 23 Question Id : 54947022906 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the progress of two- way communication, the sender is at one end while the _____ is at the other end

Options :

1. ✓ Receiver

2. ✘ Message

3. ✘ Transform

4. ✘ Make ready

Question Number : 24 Question Id : 54947022907 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What type of communication is being followed in Video conferencing?

Options :

1. ✘ Only visual
2. ✘ Two way visual
3. ✔ Two way Audio-visual
4. ✘ One way audio- visual

Question Number : 25 Question Id : 54947022908 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the communication, conversation comes under the category of _____.

Options :

1. ✘ Non- verbal
2. ✔ Verbal

Drafted

3. ✖

Facial

4. ✖

Question Number : 26 Question Id : 54947022909 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, which one is considered as semantic barrier of communication?

Options :

Attention of the receiver is diverted

1. ✖

Humming

2. ✖

Signal is lost before reaching the receiver

3. ✖

Receiver is not able to understand the meaning of the message

4. ✔

Question Number : 27 Question Id : 54947022910 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

It is desirable to start the class room communication with _____.

Options :

1. ✘ Commands

2. ✔ Narration

3. ✘ Authority

4. ✘ Variability

Question Number : 28 Question Id : 54947022911 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, which agency in India is announcing the central government programs and policies?

Options :

1. ✘ PTI

2. ✘ AIR

3. ✓ PIB

4. ✗ UTI

Question Number : 29 Question Id : 54947022912 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who is considered as father of reasoning?

Options :

1. ✓ Aristotle

2. ✗ Plato

3. ✗ Rossow

4. ✗ Mantesquo

Question Number : 30 Question Id : 54947022913 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the missing element in the following series: ABD, EFH, IJL, MNP and QRT.

Options :

1. ✘ ZXB

2. ✘ XYZ

3. ✘ WXY

4. ✔ UVX

Question Number : 31 Question Id : 54947022914 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the wrong number in the following number series: 583, 643, 800 and 691.

Options :

1. ✘ 583

2. ✘ 643

3. ✓ 800

4. ✘ 691

Question Number : 32 Question Id : 54947022915 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For example, in certain language, CLASS is written as DMBTT. What will be the code for BLUE?

Options :

1. ✘ DMVG

2. ✓ CMVF

3. ✘ CNWH

4. ✘ DNWG

Question Number : 33 Question Id : 54947022916 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, which is the largest amongst $\frac{5}{8}$, $\frac{2}{3}$, $\frac{7}{9}$, $\frac{3}{5}$?

Options :

1. ✘ $\frac{5}{8}$

2. ✘ $\frac{2}{3}$

3. ✘ $\frac{3}{5}$

4. ✔ $\frac{7}{9}$

Question Number : 34 Question Id : 54947022917 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose the length and breadth of a rectangle are in the ratio 3:1. If the breadth is 7 cm, then the length of the rectangle should be _____.

Options :

1. ✔ 21 cm

2. ✘ 18 cm

16 cm

3. ✘

14 cm

4. ✘

Question Number : 35 Question Id : 54947022918 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the average of the 12 numbers is 15. Suppose a number 41 is also included, then what will be the average of these 13 numbers?

Options :

16

1. ✘

18

2. ✘

19

3. ✘

17

4. ✔

Question Number : 36 Question Id : 54947022919 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

‘ Should India make efforts to exploit renewable energy to fulfill its energy requirements’?

I. Yes, most of the non- renewable sources of using at present are exhaustible.

II. No, exploiting renewable energy requires a huge investment and India is not in a position to invest that much amount of money.

Options :

Only argument I is strong

1. ✓

Only argument II is strong

2. ✗

Either I or II is strong

3. ✗

Neither I nor II is strong

4. ✗

Question Number : 37 Question Id : 54947022920 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Induction reasoning consists the following.

Options :

Starts with a general idea and reaches to specific conclusion

1. ✘

'If' and 'then' statements are figured

2. ✘

Drawing a general conclusion from a set of specific observations

3. ✔

'Top -down' thinking

4. ✘

Question Number : 38 Question Id : 54947022921 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Deduction reasoning involves

Options :

Conclusions are drawn from a set of specific observations

1. ✘

It quick way to make decisions

2. ✘

' Bottom- up' logic

3. ✘

Moving from general to the specific

4. ✓

Question Number : 39 Question Id : 54947022922 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Flow: River:: Stagnant : ?

Options :

Stream

1. ✘

Rain

2. ✘

Pool

3. ✓

Canal

4. ✘

Question Number : 40 Question Id : 54947022923 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In Indian logic 'Anumana' refers to _____.

Options :

1. ✘ Perception

2. ✔ Inference

3. ✘ Implication

4. ✘ Comparison

Question Number : 41 Question Id : 54947022924 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 meaning of 'Anupalabdhi'?

Options :

1. ✘ Postulation

2. ✘ Verbal testing

3. ✔ Non-apprehension

Inference

4. ✘

Question Number : 42 Question Id : 54947022925 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 'Hetvabhasa' is associated in the argument " sound is eternal because it is caused"?

Options :

Viruddha or contradictory

1. ✔

Satpratipaksa or inferentially contradicted

2. ✘

Sandyasama or the unproved

3. ✘

Badhita or non- inferentially contradicted

4. ✘

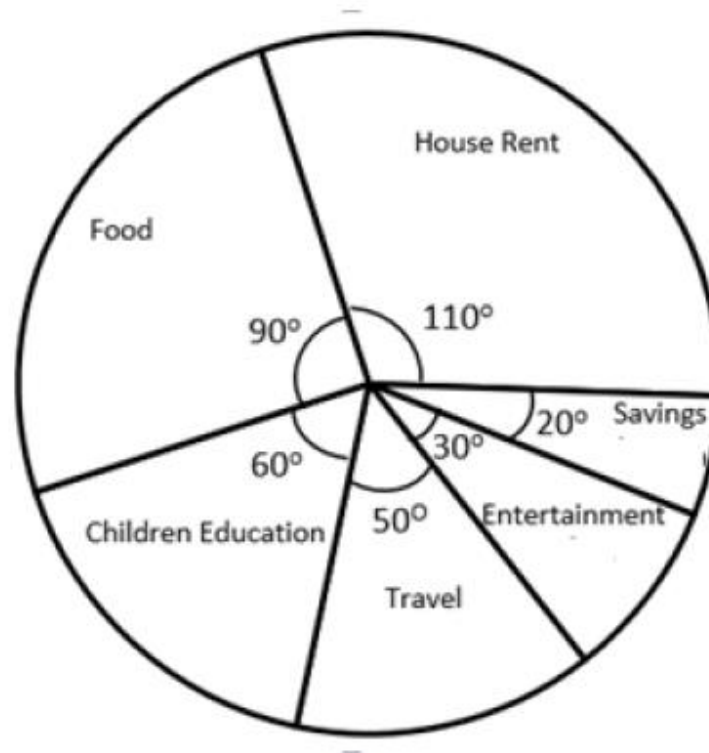
Is Section Default? :

null

Question Id : 54947022926 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 Pie-chart carefully and answer the questions 43 – 45. It gives data on how the monthly income of a person is allocated to different heads.



Sub questions

Question Number : 43 Question Id : 54947022927 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the house rent paid in a month is Rs.16500, then the amount allocated on travel in that month, in rupees, is

Options :

1. ✘ 6500

2. ✔ 7500

3. ✘ 8500

4. ✘ 9500

Question Number : 44 Question Id : 54947022928 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the amount spent in a month on travel is Rs 8000, then total income in that month is

Options :

1. ✘ 60,600

2. ✔ 57,600

3. ✘ 54,400

57,000

4. ✘

Question Number : 45 Question Id : 54947022929 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the total income in a month is Rs. 54,000, then the difference in the amounts spent on food and travel in that month, in rupees, is

Options :

6000

1. ✔

7500

2. ✘

9000

3. ✘

10500

4. ✘

Is Section Default? : null

Question Id : 54947022930 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (46 to 49)

Note:

Study the following Table carefully and answer the questions from 46 to 49. It gives data on marks obtained by students in different subjects during 2007-2010.

Year	English		Maths		Science		Social Science	
	High.	Ave.	High.	Ave.	High.	Ave.	High.	Ave.
2007	80	70	94	60	89	70	65	55
2008	82	65	85	62	95	64	66	58
2009	71	56	92	68	97	68	68	48
2010	75	52	91	64	92	75	77	58

Sub questions

Question Number : 46 Question Id : 54947022931 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 overall average of marks in the four subjects in the year 2009?

Options :

1. ✖ 63

2. ✖ 64

3. ✘ 65

4. ✔ 60

Question Number : 47 Question Id : 54947022932 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose that there were 40 students in science in the year 2009, how much total marks did they receive when combined together?

Options :

1. ✘ 2800

2. ✔ 2720

3. ✘ 2560

4. ✘ 3000

Question Number : 48 Question Id : 54947022933 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the difference between the highest and the average marks in Maths was maximum?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✔ 2007

4. ✘ 2008

Question Number : 49 Question Id : 54947022934 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the difference between the highest and the average marks in social sciences was least ?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✘ 2007

4. ✔ 2008

Is Section Default? : null

Question Number : 50 Question Id : 54947022935 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 acronyms, data is transferred securely across the world wide web.

Options :

1. ✘ HTTP

2. ✔ HTTPS

3. ✘ POP

4. ✘ IMAP

Question Number : 51 Question Id : 54947022936 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which software is needed to create slideshows?

Options :

1. ✘ Paint
2. ✘ Microsoft Word
3. ✘ Windows X P
4. ✔ Micro Soft Power Point

Question Number : 52 Question Id : 54947022937 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Joystick _____ device.

Options :

1. ✔ Input
2. ✘ Output

3. ✖ Storage

4. ✖ Network

Question Number : 53 Question Id : 54947022938 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Python is _____.

Options :

1. ✖ An operating system

2. ✔ Programming Language

3. ✖ An application program

4. ✖ A compiler

Question Number : 54 Question Id : 54947022939 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Speed of internet is measured in _____.

Options :

1. ✘ GHZ
2. ✔ GBPS
3. ✘ GB
4. ✘ DPI

Question Number : 55 Question Id : 54947022940 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

VIDWAN scheme of MHRD is aimed at _____.

Options :

1. ✔ Creating a database to national research network
2. ✘ Making available e-resources

3. ✖ Promoting entrepreneurship among faculty

4. ✖ Awarding National professorship to faculty

Question Number : 56 Question Id : 54947022941 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The UGC portal ' e-SARTS is for _____.

Options :

1. ✖ Special Assistance for Research in Technology and Sciences

2. ✖ Special Assistance for Research and Training in Sciences

3. ✖ Support for Academic and Research Training in Social Sciences

4. ✔ Scholarship – Fellowship Award Registration Tracking System

Question Number : 57 Question Id : 54947022942 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 millennium goals , which one is not considered?

Options :

Achieve Universal Primary education

1. ✘

Ensure healthy lives and promote well being for all at all ages

2. ✔

Ensure environmental sustainability

3. ✘

Eradicate extreme poverty and hunger

4. ✘

Question Number : 58 Question Id : 54947022943 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sustainable goals proposed by the United Nations will be achieved by the end of year.

Options :

2045

1. ✘

2040

2. ✘

3. ✘ 2035

4. ✔ 2030

Question Number : 59 Question Id : 54947022944 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 most adverse consequence of modern agriculture ?

Options :

1. ✘ Decrease in animals and their natural habitats

2. ✔ Water pollution due to usage of chemical fertilizers and pesticides

3. ✘ Soil erosion

4. ✘ Employment opportunities increase

Question Number : 60 Question Id : 54947022945 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, which gas is occurring abundantly in the air naturally?

Options :

Water vapor

1. ✘

Carbon dioxide

2. ✘

Nitrogen

3. ✔

Oxygen

4. ✘

Question Number : 61 Question Id : 54947022946 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In India, the first nuclear reactor was set up at _____.

Options :

Bombay

1. ✔

Kalpakam

2. ✘

Hyderabad

3. ✖

Tarapur

4. ✖

Question Number : 62 Question Id : 54947022947 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 , which one is not considered as natural disaster ?

Options :

Cyclone

1. ✖

Earthquake

2. ✖

Tsunami

3. ✖

Short circuit fire

4. ✔

Question Number : 63 Question Id : 54947022948 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The species whose population has been reduced considerably and is at the verge of extinction, is called as _____ species.

Options :

1. ✘ Rare
2. ✔ Endangered
3. ✘ Vulnerable
4. ✘ Indeterminate

Question Number : 64 Question Id : 54947022949 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 traditional Universities, which one is not established in the year 1857?

Options :

1. ✘ Bombay
2. ✔ Delhi

Calcutta

3. ✘

Madras

4. ✘

Question Number : 65 Question Id : 54947022950 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which organization is established in India to promote, review, encourage, assist, and coordinate social science research

Options :

NCAR

1. ✘

NCERT

2. ✘

CSIR

3. ✘

ICSSR

4. ✔

Question Number : 66 Question Id : 54947022951 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year the first Open University in India was established?

Options :

1. ✘ 1986
2. ✘ 1980
3. ✔ 1982
4. ✘ 1985

Question Number : 67 Question Id : 54947022952 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The NCTE established in India to strengthen _____.

Options :

1. ✔ Teacher education
2. ✘ Technical education

Computer education

3. ✘

Medical education

4. ✘

Question Number : 68 Question Id : 54947022953 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 purpose of establishing the National Skills qualification framework in the country ?

Options :

Technology development

1. ✘

Social development

2. ✘

To develop competencies at different levels

3. ✔

Rural development

4. ✘

Question Number : 69 Question Id : 54947022954 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 main purpose of establishing National program for Technology Enhanced Learning (NPTEL) by the MHRD?

Options :

To promote Engineering education

1. ✓

To promote higher education

2. ✘

To promote technology in agriculture

3. ✘

To develop pollution free technologies

4. ✘

Question Number : 70 Question Id : 54947022955 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 explicit objective of value education?

Options :

To inculcate economic values

1. ✘

To inculcate political values

2. ✘

To inculcate cultural values

3. ✘

To inculcate moral values

4. ✔

Chemical Sciences

Section Id :	549470323
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 : 54947022956 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The correct order of atomic radii are:

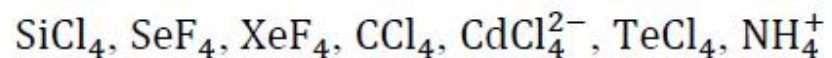
- i) $N < P < Si$
- ii) $Cl < P < Mg$
- iii) $B < C < N$

Options :

1. ✓ i and ii only
2. ✗ ii and iii only
3. ✗ i and iii only
4. ✗ i, ii and iii

Question Number : 72 Question Id : 54947022957 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many of the following molecules have tetrahedral geometry?



Options :

1. ✗ 3
2. ✗ 2
3. ✓ 4
4. ✗ 5

Question Number : 73 Question Id : 54947022958 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 statements is not correct?

Options :

1. ✓ Zn^{2+} is a hard acid

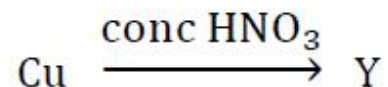
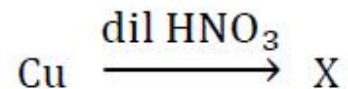
2. ✗ Soft acids have cations of large size

3. ✗ Soft bases are easily oxidised

4. ✗ Hard bases have donor atoms with high electronegativity

Question Number : 74 Question Id : 54947022959 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The gases X, Y evolved in the following reactions respectively are:



Options :

1. ✘ NO₂, NO

2. ✔ NO, NO₂

3. ✘ NO₂, NO₂

4. ✘ NO, NO

Question Number : 75 Question Id : 54947022960 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Aqueous solutions of borate and carbonate respectively are:

Options :

1. ✘ Acidic, alkaline

2. ✘ Alkaline, acidic

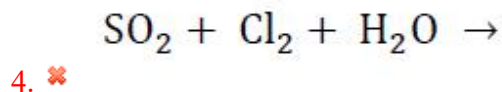
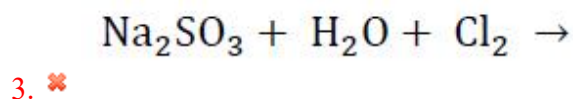
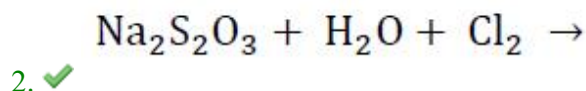
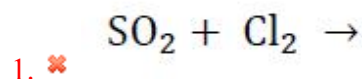
3. ✘ Acidic, acidic

4. ✔ Alkaline, alkaline

Question Number : 76 Question Id : 54947022961 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

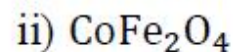
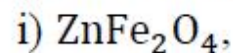
In which of the following reactions, sulphur gets precipitated?

Options :



Question Number : 77 Question Id : 54947022962 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 inverse spinels?



Options :

1. ✘ i and ii only
2. ✘ i, ii and iv only
3. ✘ iii and iv only
4. ✔ ii and iv only

Question Number : 78 Question Id : 54947022963 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The octahedral complex of a metal ion M^{3+} with four monodentate ligands p, q, r and s absorb wavelengths in the region of red, green, yellow and blue, respectively. The increasing order of ligand strength of the four ligands is:

Options :

1. ✘ $s < r < q < p$
2. ✔ $p < r < q < s$
3. ✘ $r < q < s < p$

4. ✘ $p < q < r < s$

Question Number : 79 Question Id : 54947022964 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The coordination numbers of Cu(I) in solid $K[Cu(CN)_2]$ and Ag(I) in $[AgTe_7]^{3-}$ respectively are:

Options :

1. ✘ 2, 2

2. ✘ 2, 7

3. ✘ 3, 4

4. ✔ 3, 3

Question Number : 80 Question Id : 54947022965 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The magnetic moment of $K_n[VF_6]$ is 2.79 BM. The oxidation state of vanadium in $K_n[VF_6]$ is:

Options :

1. ✘ +4

2. ✘ +1

3. ✘ +2

4. ✔ +3

Question Number : 81 Question Id : 54947022966 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a metal ion with $[\text{Xe}]4f_2$ ground state electronic configuration, the ground state term symbol is:

Options :

1. ✘ 5I_4

2. ✘ 3H_6

3. ✔ 3H_4

4. ✘ 5I_8

Question Number : 82 Question Id : 54947022967 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Acid hydrolysis of $[\text{Co}(\text{en})_2\text{LX}]^{n+}$ (L and X are trans to each other) gives more cis-product when L, X are respectively:

Options :

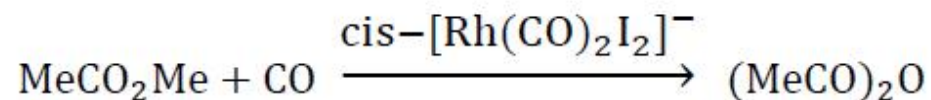
1. ✓ OH^- , Cl^-

2. ✗ Br^- , Cl^-

3. ✗ Cl^- , Cl^-

4. ✗ Cl^- , Br^-

Question Number : 83 Question Id : 54947022968 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0



The above reaction is known as:

Options :

1. ✗ Monsanto process

2. ✓ Tennessee–Eastman process

3. ✗ Wacker process

4. ✗ Wilkinson process

Question Number : 84 Question Id : 54947022969 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ^1H NMR signal of $(\text{C}_5\text{H}_5)_2\text{Fe}(\text{CO})_2$ which remains constant when the spectrum is recorded at all temperatures is at:

Options :

1. ✗ 3.5 ppm

2. ✓ 5.6 ppm

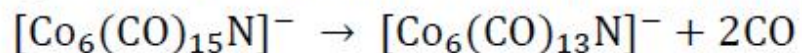
3. ✗ 6.4 ppm

4. ✗ 4.5 ppm

Question Number : 85 Question Id : 54947022970 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response

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

Suggest what change in cluster frame work structure might accompany in the following reaction, based on total valence electron count.



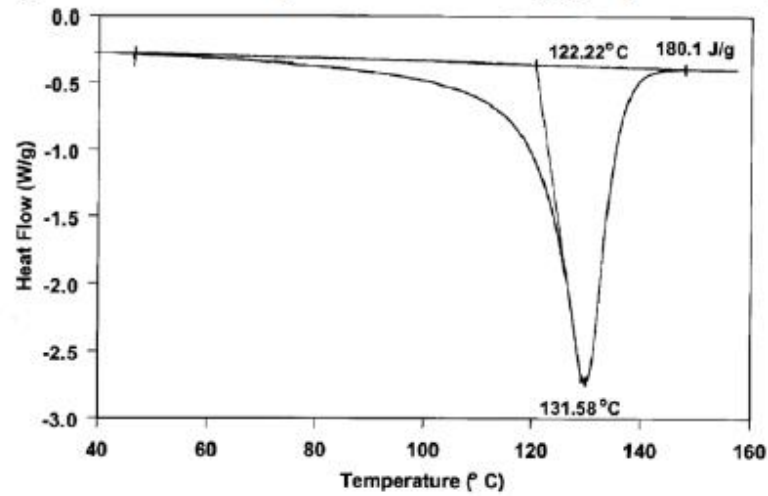
(Hint: Both clusters contain an interstitial N atom and terminal CO's which contribute 5 electrons and 2 electrons each respectively to cluster bonding.)

Options :

1. ✓ Trigonal prism to octahedral
2. ✗ Octahedral to square based pyramid
3. ✗ Octahedral to trigonal prism
4. ✗ Square based pyramid to trigonal bipyramid

Question Number : 86 Question Id : 54947022971 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The analytical technique indicated by the following graphical representation is:



Options :

- 1. ✘ TGA
- 2. ✘ DTA
- 3. ✔ DSC
- 4. ✘ DTG

Question Number : 87 Question Id : 54947022972 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 detectors is widely used to detect environmental samples like chlorinated pesticides and polychlorinated biphenyls?

Options :

1. ✘ Flame ionization detector

2. ✘ Thermal conductivity detector

3. ✘ Argon ionisation detector

4. ✔ Electron capture detector

Question Number : 88 Question Id : 54947022973 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 statements is/are correct?

- i) The geometry of Zinc(II) in active site of alcohol dehydrogenase is distorted tetrahedral.
- ii) T form of haemoglobin predominates at higher pO_2
- iii) Ferridoxins are electron transferring proteins involved in one-electron transfer processes

Options :

1. ✘ i and ii only

2. ✔ i, ii and iii

3. ✘ ii and iii only

4. ✘ iii only

Question Number : 89 Question Id : 54947022974 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Match the following:

List-I		List-II	
A	Dimercaprol	i	Menke's disease
B	Pencillamine	ii	Rheumatoid arthritis
C	Auranofin	iii	Lewisite gas poisoning
D	Copper histidine	iv	Wilson's disease
		v	Cancer treatment

Options :

1. ✘ A-ii, B-iii, C-i, D-iv

2. ✘ A-iii, B-iv, C-ii, D-v

3. ✓ A-iii, B-iv, C-ii, D-i

4. ✘ A-ii, B-iv, C-i, D-iii

Question Number : 90 Question Id : 54947022975 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

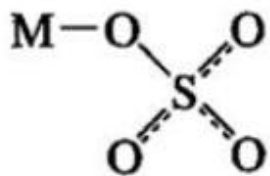
In which of the following, SO_4^{2-} exhibits less number of IR active vibrations?

Options :



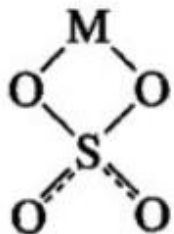
Free ion

1. ✓



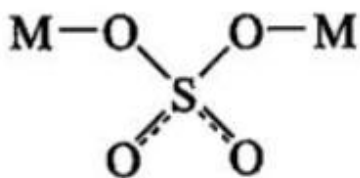
Unidentate complex

2. ✘



Bidentate complex

3. ✖

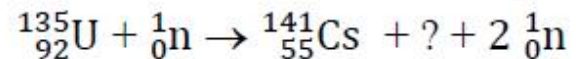


Bridged bidentate

4. ✖

Question Number : 91 Question Id : 54947022976 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The second nuclide formed in the following reaction is an isotope of:



Options :

1. ✖ Rh

2. ✖ Ru

3. ✓ Rb

4. ✘ Y

Question Number : 92 Question Id : 54947022977 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The radioactive isotope used in myocardial scan is:

Options :

1. ✘ ${}_{11}^{24}\text{Na}$

2. ✓ ${}_{19}^{43}\text{K}$

3. ✘ ${}_{15}^{32}\text{P}$

4. ✘ ${}_{9}^{18}\text{F}$

Question Number : 93 Question Id : 54947022978 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider the following pairs.

	Oxide	Property
A	Bi_2O_3	Basic
B	N_2O	acidic
C	PbO	amphoterics
D	CO	neutral

Which of the above pairs are correctly matched?

Options :

1. ✖ A & C only
2. ✖ B & D only
3. ✖ A, B, C & D
4. ✔ A, C & D only

Question Number : 94 Question Id : 54947022979 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the wave function $\psi = e^{imx}$, the Eigen value for the operator $\frac{d^2}{dx^2}$ is

Options :

1. ✖ im

2. ✓ $-m^2$

3. ✗ imx

4. ✗ $-m^2x$

Question Number : 95 Question Id : 54947022980 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When the particle moves in a one dimensional box of length “a” the zero point energy of the particle is equal to

Options :

1. ✗ $\frac{h^2}{8m}$

2. ✗ $\frac{4h^2}{8ma^2}$

3. ✓ $\frac{h^2}{8ma^2}$

4. ✘ 0

Question Number : 96 Question Id : 54947022981 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to variation principle, the calculated energy of the system is always _____ to the experimental value

Options :

1. ✔ Greater (or) equal

2. ✘ Less than (or) equal

3. ✘ Equal

4. ✘ Twice

Question Number : 97 Question Id : 54947022982 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Term symbol for O_2^+ is

Options :

1. ✘ $^3\Sigma_g$

2. ✖ $1\Sigma_g$

3. ✔ $2\Pi_g$

4. ✖ $2\Sigma_u$

Question Number : 98 Question Id : 54947022983 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The phenomenon of resonance is explained by

Options :

1. ✖ M.O. Theory

2. ✔ V.B. Theory

3. ✖ Perturbation Theory

4. ✖ Huckel's Theory

Question Number : 99 Question Id : 54947022984 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 is not correct?

Options :

1. ✖ Bonding M.O. are formed by the additive effect of the A.O.
2. ✖ Energy of the antibonding M.O is higher than that of the combining A.O
3. ✖ Antibonding M.O are represented by σ^* , π^* , δ^* etc.
4. ✔ The electron density in the internuclear region in bonding M.O is very low

Question Number : 100 Question Id : 54947022985 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sum of the squares of the dimensions of the irreducible representations in a group is equal to

Options :

1. ✔ order of the group, h
2. ✖ number of classes in a group
3. ✖ character of irreducible representation

4. ✘ zero

Question Number : 101 Question Id : 54947022986 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 the C_{3v} point group is equal to

Options :

1. ✘ 3

2. ✘ 4

3. ✔ 6

4. ✘ 2

Question Number : 102 Question Id : 54947022987 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rotational constant, B is equal to (where I = moment of inertia)

Options :

1. ✔ $\frac{h}{8\pi^2IC}$

$$\frac{h^2}{8mC}$$

2. ✘

$$\frac{h^2}{8\pi^2C}$$

3. ✘

$$\frac{8\pi^2m}{h^2}$$

4. ✘

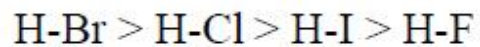
Question Number : 103 Question Id : 54947022988 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The correct order of force constants of hydrogen halides is

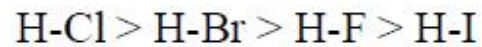
Options :



1. ✘



2. ✘



3. ✘



4. ✔

Question Number : 104 Question Id : 54947022989 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Number of $^1\text{H-NMR}$ signals expected for the $\text{H}_3\text{C}-\overset{\text{H}}{\underset{\text{Cl}}{\text{C}}}-\overset{\text{H}}{\underset{\text{H}}{\text{C}}}-\text{Cl}$ compound, is

Options :

- 1. ✘ 3
- 2. ✔ 4
- 3. ✘ 2
- 4. ✘ 6

Question Number : 105 Question Id : 54947022990 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 processes are reversible?

- a. Mixing of two gases by diffusion
- b. Dissolution of a solute in a solvent
- c. Expansion of a gas against an external pressure only infinitesimally different from the internal pressure
- d. Evaporation of water at 373K and 1atm pressure

Options :

- 1. ✘ a & b only
- 2. ✘ a, b & c only
- 3. ✔ c only
- 4. ✘ a & d only

Question Number : 106 Question Id : 54947022991 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the equation, $dG \leq VdP - SdT$

Options :

The sign equal refers to a reversible process while the sign less than refers to an irreversible process.

1. ✓

The sign equal refers to an irreversible process and less than refers to a reversible process.

2. ✘

At constant temperature, $dG < -S$

3. ✘

At constant pressure, $dG < V$

4. ✘

Question Number : 107 Question Id : 54947022992 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

2 Moles of ethyl alcohol and 3 moles of water are mixed at 25°C to give an ideal solution. Which of the following statements are correct?

- a) $\Delta H_{\text{mix}} = +\text{ve}$; $\Delta V_{\text{mix}} = 0$; $\Delta S_{\text{mix}} = -\text{ve}$
- b) $\Delta H_{\text{mix}} = 0$; $\Delta V_{\text{mix}} = 0$; $\Delta S_{\text{mix}} = +\text{ve}$
- c) $\Delta H_{\text{mix}} = -\text{ve}$; $\Delta V_{\text{mix}} = +\text{ve}$; $\Delta S_{\text{mix}} = +\text{ve}$
- d) $\Delta H_{\text{mix}} = 0$; $\Delta V_{\text{mix}} = -\text{ve}$; $\Delta S_{\text{mix}} = +\text{ve}$; $\Delta G_{\text{mix}} = -\text{ve}$

Options :

1. ✘ a only
2. ✘ a & d only
3. ✔ b only
4. ✘ d only

Question Number : 108 Question Id : 54947022993 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to Stirling's approximation for large value of x, $\ln x! =$

Options :

1. ✘ $x \ln x$

2. ✘ $x(x-1)(x-2)\dots\dots$

3. ✘ $\frac{x \ln x}{x - x^2}$

4. ✔ $x \ln x - x$

Question Number : 109 Question Id : 54947022994 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For the strong electrolytes NaOH, NaCl and BaCl₂ the molar ionic conductances at infinite dilution are 248.1×10^{-4} , 126.5×10^{-4} and 280.0×10^{-4} S.m².mol⁻¹ respectively. λ_m° for Ba(OH)₂ is (in S.m².mol⁻¹)

Options :

1. ✔ 523.2×10^{-4}

2. ✘ 654.6×10^{-4}

3. ✘ 84.6×10^{-4}

4. ✘ 401.6×10^{-4}

Question Number : 110 Question Id : 54947022995 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The standard electrode potential (E°) for Daniel cell is 1.10V. ΔG° of the cell is

Options :

1. ✘ 212.3 KJmol^{-1}

2. ✔ $-212.3 \text{ KJmol}^{-1}$

3. ✘ $106.15 \text{ KJmol}^{-1}$

4. ✘ $-106.15 \text{ KJmol}^{-1}$

Question Number : 111 Question Id : 54947022996 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For the reaction $A + 2B \rightarrow \text{product}$, it is found that if the concentration of A is doubled the rate increases four times but when the concentration of B is doubled, the rate becomes doubled. The overall order of the reaction is

Options :

1. ✘ 1

2. ✘ 2

3. ✔ 3

4. ✘ $3/2$

Question Number : 112 Question Id : 54947022997 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The graph drawn in the following is a straight line?

Options :

1. ✘ k versus T

2. ✘ Logk Vs T^2

3. ✘ Logk Vs T

4. ✔ logk Vs $1/T$

Question Number : 113 Question Id : 54947022998 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response

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

The Tyndall effect is not observed in

Options :

1. ✘ Suspensions
2. ✔ True solutions
3. ✘ Emulsions
4. ✘ Colloidal solutions

Question Number : 114 Question Id : 54947022999 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the ZnS crystal the coordination number is

Options :

1. ✘ 6
2. ✘ 8
3. ✘ 2

4. ✓ 4

Question Number : 115 Question Id : 54947023000 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Equal number of polymer molecules with $M_1 = 10,000$ and $M_2 = 40,000$ are mixed to give a polymer mixture. Mass average molar mass is equal to

Options :

1. ✓ 34,000

2. ✗ 25,000

3. ✗ 50,000

4. ✗ 30,000

Question Number : 116 Question Id : 54947023001 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A piece of metal is weighed a number of times and the average value obtained is 34.67 gm. If the true value is 34.6 gm the relative error is

Options :

1. ✘ 7%

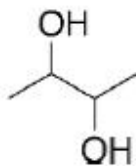
2. ✘ 1%

3. ✔ 0.2%

4. ✘ 0.7%

Question Number : 117 Question Id : 54947023002 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 optically active isomers for the following compound is



Options :

1. ✘ 4

2. ✔ 2

3. ✘ 1

4. ✖ 3

Question Number : 118 Question Id : 54947023003 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the correct statement about the chair conformation of trans-1, 4-dimethyl cyclohexane.

Options :

The higher energy conformer is that which is having one axial methyl and one equatorial methyl group

1. ✖

The lower energy conformer is that which is having one axial methyl and one equatorial methyl group

2. ✖

The higher energy conformer contains two axial methyl groups.

3. ✔

The lower energy conformer contains two axial methyl groups.

4. ✖

Question Number : 119 Question Id : 54947023004 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 compounds having molecular formula $C_3H_6Cl_2$ will show only one NMR signal.

Options :

2,2- dichloropropane

1. ✓

1,1- dichloropropane

2. ✗

1,2- dichloropropane

3. ✗

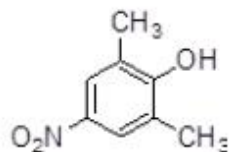
1,3-dichloropropane

4. ✗

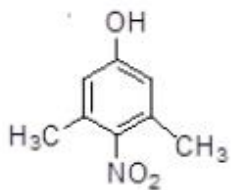
Question Number : 120 Question Id : 54947023005 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following phenols will show highest acidity?

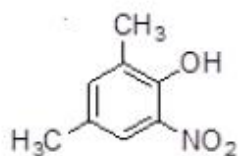
Options :



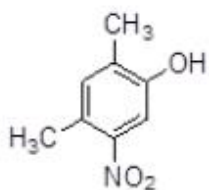
1. ✓



2. ✖



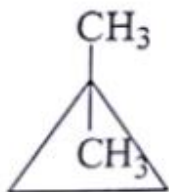
3. ✖



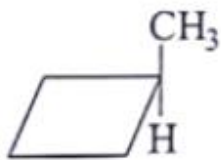
4. ✖

Question Number : 121 Question Id : 54947023006 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Predict the number of signals in ^1H NMR for the following molecules?



P



Q



R



S

Options :

P-3 Q-4 R-4 S-3

1. ✘

P-2 Q-6 R-4 S-2

2. ✔

P-2 Q-4 R-6 S-2

3. ✘

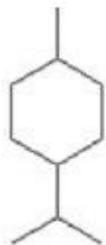
P-2 Q-4 R-2 S-6

4. ✘

Question Number : 122 Question Id : 54947023007 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 terpene skeletons does not obey the isoprene rule?

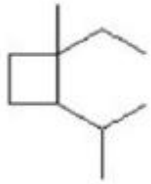
Options :



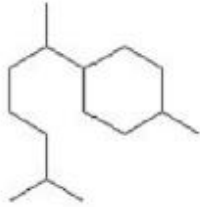
1. ✘



2. ✔



3. ✘



4. ✘

Question Number : 123 Question Id : 54947023008 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which sugars are present in Sucrose

Options :

1. ✘ Glucose and Maltose

2. ✘ Maltose and Fructose

3. ✘ Fructose and Galactose

4. ✔ Fructose and Glucose

Question Number : 124 Question Id : 54947023009 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Why alkyl halides are considered to be very reactive compounds towards nucleophile?

Options :

They have an electrophilic carbon & a bad leaving group

1. ✘

They have a nucleophilic carbon & a good leaving group

2. ✘

They have an electrophilic carbon & a good leaving group

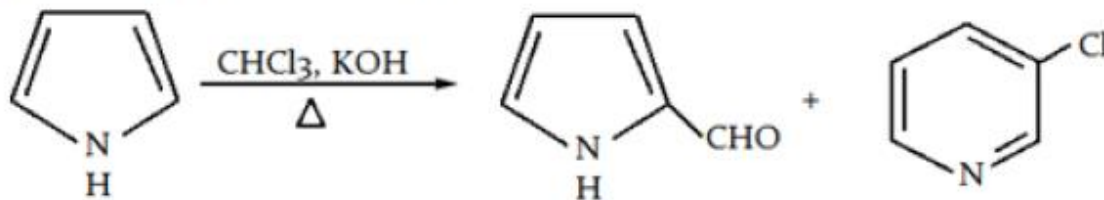
3. ✔

They have a nucleophilic carbon

4. ✘

Question Number : 125 Question Id : 54947023010 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 name of the following reaction?



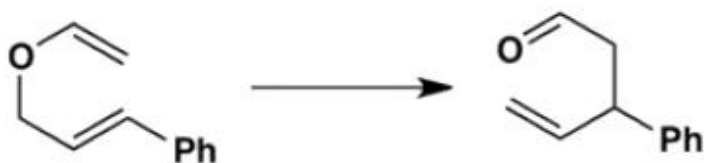
Options :

1. ✘ Gattermann Reaction
2. ✔ Riemer-Tiemann Reaction
3. ✘ Friedal crafts formylation
4. ✘ Cannizaro Reaction

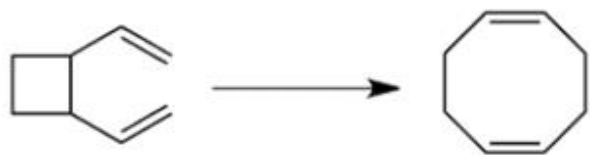
Question Number : 126 Question Id : 54947023011 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following reactions is classified as an electrocyclic reaction?

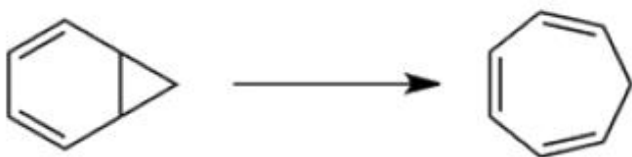
Options :



1. ✘



2. ✘



3. ✔



4. ✘

Question Number : 127 Question Id : 54947023012 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 **enantiomeric excess** of the mixture containing 12.8 mol (*R*)-2-bromobutane and 3.2 mol (*S*)-2-bromobutane?

Options :

60%

1. ✔

2. ✖ 65%

3. ✖ 84%

4. ✖ 16%

Question Number : 128 Question Id : 54947023013 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 (to be converted by FGI) is not a good alternative target for the synthesis of a carboxylic acid R-COOH?

Options :

1. ✖ R-CHO

2. ✔ R-OH

3. ✖ R-CO-CH₃

4. ✖ R-CN

Question Number : 129 Question Id : 54947023014 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 will give positive Iodoform test?

Options :

1. ✘ 2-phenylethanol
2. ✔ 1-Phenylethanol
3. ✘ 1-Pentanal
4. ✘ 3-Pentanol

Question Number : 130 Question Id : 54947023015 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The stabilization of a carbocation by methyl groups involves hyperconjugation between

Options :

1. ✘ a filled C-H sigma bond with a vacant π^* orbital
2. ✘ a vacant σ^* orbital with a vacant p-orbital

a filled C-H sigma bond with filled Pi-orbital

3. ✘

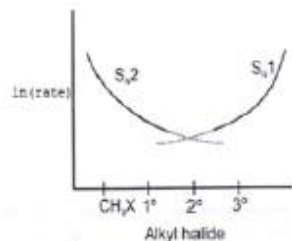
a filled C-H sigma bond with a vacant p-orbital

4. ✔

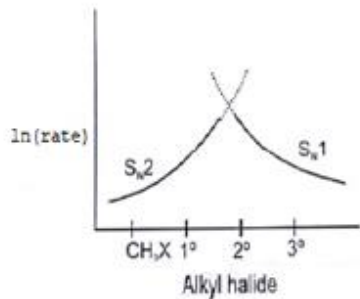
Question Number : 131 Question Id : 54947023016 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following curve correctly represents S_N1 vs S_N2 ?

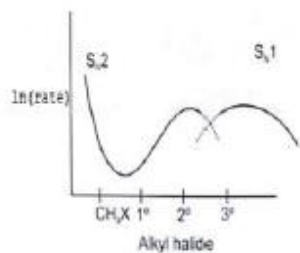
Options :



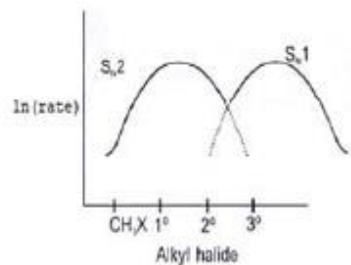
1. ✔



2. ✘



3. ✘



4. ✘

Question Number : 132 Question Id : 54947023017 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 aromatic?

Options :

1. ✘ Pyrrole

2. ✘ Pyridine

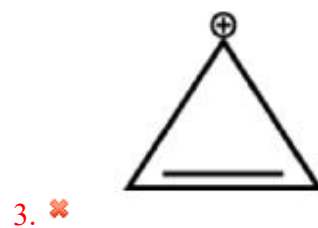
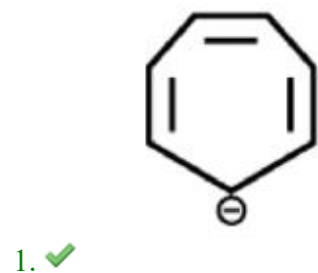
3. ✔ Quinoline

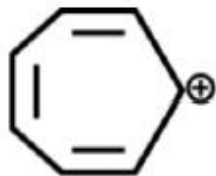
4. ✖ 1, 3, 5, heptatriene

Question Number : 133 Question Id : 54947023018 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Whichone of the following compounds is not aromatic?

Options :





4. ✘

Question Number : 134 Question Id : 54947023019 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In an aromatic electrophilic substitution reactions of benzene, the electron donating groups (eg. Methoxy) are described as

Options :

Meta directing and activating

1. ✘

Meta directing and deactivating

2. ✘

Ortho-para directing and activating

3. ✔

Ortho-para directing and deactivating

4. ✘

Question Number : 135 Question Id : 54947023020 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Arndt Eistert synthesis involves the following rearrangement

Options :

Curtius rearrangement

1. ✘

Wolf rearrangement

2. ✔

Lossen rearrangement

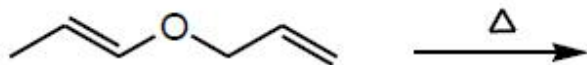
3. ✘

Beckmann rearrangement

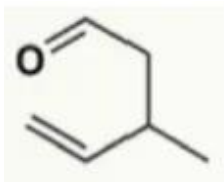
4. ✘

Question Number : 136 Question Id : 54947023021 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of unsaturated aldehydes is the sigmatropic rearrangement product obtained by heating the following ether?

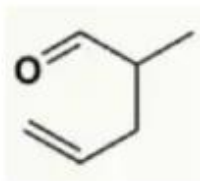


Options :

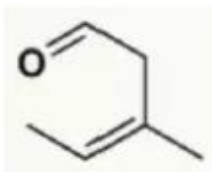


1. ✘

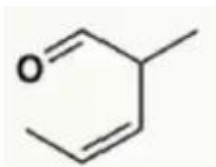
2. ✓



3. ✗



4. ✗



Question Number : 137 Question Id : 54947023022 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total number of structural ethers possible with the molecular formula $C_5H_{12}O$

Options :

1. ✗

Four

2. ✗

Five

3. ✓

Six

4. ✘ Three

Question Number : 138 Question Id : 54947023023 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The regioselectivity and stereospecificity in the hydroboration-oxidation of an alkene is best described as _____

Options :

Markovnikov orientation with syn-addition

1. ✘

Markovnikov orientation with anti-addition

2. ✘

Anti-Markovnikov orientation with anti-addition

3. ✘

Anti-Markovnikov orientation with syn-addition

4. ✔

Question Number : 139 Question Id : 54947023024 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is meant by a reaction going in 94% enantiometric excess?

Options :

The product contains 94% of one enantiomer and 6% of the other enantiomer

1. ✓

The product contains 94% of one enantiomer and 6% of other products

2. ✘

The product contains an enantiomer which is 94% pure

3. ✘

The product contains 97% of one enantiomer and 3% of the other enantiomer

4. ✘

Question Number : 140 Question Id : 54947023025 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The correct statement regarding the basicity of arylamines is

Options :

Arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalized by interaction with the aromatic ring electron system.

1. ✓

Arylamines are generally more basic than alkylamines because the nitrogen lone-pair electrons are not delocalized by interaction with the aromatic ring electron system.

2. ✘

Arylamines are generally more basic than alkylamines because of aryl group.

3. ✖

Arylamines are generally more basic than alkylamines because the nitrogen atom in arylamines is sp -hybridized.

4. ✖