Entrance Exam

2024



QUESTION PAPER

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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 2nd May 2024 Shift 1
Duration :	120
Total Marks :	140
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No

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

Research Methodology

Section Id :	971036391
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	66
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 : 97103627496 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The acronym MOOCS stands for

Options :

1. ✖ Modular Open Online Courses

2. ✖ Mass Online Offline Class

3. ✖ Multi-media Open Online Classes

4.

✔ Massive Open Online Courses

Question Number : 2 Question Id : 97103627497 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The idea of making students watch an education video at home and participate in discussion during the class is known as

Options :

1. ✖ Diverse class room

2. ✔ Flipped class room

3. ✖ Multi-media class room

4. ✖ Google class room

Question Number : 3 Question Id : 97103627498 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The term 'Zoom' in the context of ICT refers to

Options :

1. ✖ Learning Management System

2. ✖ Flipped class room

3. ✔ Video conferencing tool

4. ✖ Online data collection system

Question Number : 4 Question Id : 97103627499 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is a popular method of feedback in ICT based learning

Options :

1. ✖ WhatsApp web

2. ✖ Dropbox

3. ✖ Google Drive

4. ✔ Google form

Question Number : 5 Question Id : 97103627500 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A commonly used BYOD (Bring Your Own Device) in ICT supported learning process is

Options :

1. ✔ Laptop

2. ✖ Smartphone

3. ✖ Interactive white board

4. ✖ LCD projector

Question Number : 6 Question Id : 97103627501 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The method of dividing students into small groups to learn parts of a topic is known as

Options :

1. ✖ Round-Robin method

2. ✖ Numbered heads together

3. ✖ Think-pair-share method

4. ✔ Jigsaw method

Question Number : 7 Question Id : 97103627502 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Microsoft Teams is one ICT tool that supports

Options :

1. ✖ Web-based slides

2. ✔ Real time communication and collaboration

3. ✖ LMS

4. ✖ Remote Learning

Question Number : 8 Question Id : 97103627503 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which platform is widely recognized as one of the first MOOC providers?

Options :

1. ✖ Coursera

2. ✖ Udemy

3. ✖ Khan Academy

4. ✔ edX

Question Number : 9 Question Id : 97103627504 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The system of securing academic credit through optional and elective courses was made possible by

Options :

1. ✖ MOOCS

2. ✖ Semester System

3. ✔ Choice Based Credit System

4. ✖ Distance Education

Question Number : 10 Question Id : 97103627505 Display Question Number : Yes Is Questi

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

One of the following types of questions cannot be easily auto-graded by LMS software.

Options :

1. ✖ True-false type questions

2. ✔ Subjective questions

3. ✖ Multiple Choice questions

4. ✖ Matching type questions

Question Number : 11 Question Id : 97103627506 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An example of data measured on nominal scale is

Options :

1. ✖ Actual age of a person

2. ✖ Body Weight

3. ✔ Gender

4. ✖ Shoe length

Question Number : 12 Question Id : 97103627507 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Review of relevant literature is the vital step in the following stage of research

Options :

1. ✖ Data collection

2. ✔ Problem formulation stage

3. ✖ Sampling design

4. ✖ Interpretation of results

Question Number : 13 Question Id : 97103627508 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 style is commonly used in thesis writing for humanities ?

Options :

1. ✔ MLA style

2. ✖ APA style

3. ✖ IEEE style

4. ✖ Chicago style

Question Number : 14 Question Id : 97103627509 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 expansion of the acronym APA in the style of references?

Options :

1. ✖ Associated Printers Architecture

2. ✔ American Psychological Association

3. ✖ Advanced Psychological Appendix

4. ✖ Authenticated Publishing Act

Question Number : 15 Question Id : 97103627510 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Every published paper/article in a journal is expected to have completed the stage

Options :

1. ✖ Publisher's review

2. ✖ Editorial review

3. ✖ Public review

4. ✔ Peer review

Question Number : 16 Question Id : 97103627511 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ‘bottom-up method’ approach in research is known as ‘

Options :

1. ✔ Inductive method

2. ✖ Hypothesis method

3. ✖ Pattern method

4. ✖ Interview method

Question Number : 17 Question Id : 97103627512 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

The audio-visual communication among researchers across the globe using ICT is called

Options :

1. ✖ Web hosting

2. ✖ Podcasting

3. ✔ Tele-conferencing

4. ✖ Telecasting

Question Number : 18 Question Id : 97103627513 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is a powerful tool to seek content on a topic from internet resources

Options :

1. ✖ GPS

2. ✖ Alta Vista

3. ✔ ChatGPT

4. ✖ Skype

Question Number : 19 Question Id : 97103627514 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The acronym CARE in UGC-CARE stands for

Options :

1. ✖ Committee on Academic Research Ethics

2. ✔ Consortium for Academic Research and Ethics

3. ✖ Consortium for Academic Regulatory Ethics

4. ✖ Core Academic Research Ethics

Question Number : 20 Question Id : 97103627515 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

By group discussion one can evaluate the ability of a participant to

Options :

1. ✖ Dominate others

2. ✖ Control other participants

3. ✔ Confer with other participants

4. ✖ Lead over others

Is Section Default? : null

Question Id : 97103627516 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 : (21 to 25)

Read the following passage and answer the questions below:

According to the World Health Organization cancer is the second leading cause of death globally. The cancer burden continues to grow globally. However, survival rates are improving with the help of advanced diagnosis and treatment. Regular screenings and early detection are two main key factors that help improve survival rates. "Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women," mentions the WHO website. Tobacco use alone accounts for around one-third of deaths from cancers. Other risk factors include high body mass index, alcohol consumption, family history, some health conditions, environment, infections by certain viruses and more. Common treatment options include surgery, chemotherapy, radiation therapy, bone marrow transplant, targeted drug therapy and more.

Sub questions

Question Number : 21 Question Id : 97103627517 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which among the following is not the treatment options for Cancer ?

Options :

1. ✖ Chemotherapy

2. ✖ Radiation therapy

3. ✔ PRP

4. ✖ Bone marrow transplant

Question Number : 22 Question Id : 97103627518 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Survival rate of cancer increases with

Options :

1. ✖ Stomach and live cancer

2. ✔ Regular screening and early detection

3. ✖ Tobacco use

4. ✖ Infections by certain viruses

Question Number : 23 Question Id : 97103627519 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is not commonly found cancer specific to women

Options :

1. ✖ Lung

2. ✖ Cervical

3.

✔ Prostate

4. ✖ Colorectal

Question Number : 24 Question Id : 97103627520 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following is not known risk factor for cancer

Options :

1. ✖ High body mass index

2. ✔ High glucose levels

3. ✖ Alcohol consumption

4. ✖ Chewing tobacco

Question Number : 25 Question Id : 97103627521 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Common therapy to treat cancer includes

Options :

1. ✖ Physiotherapy

2. ✖ Laser therapy

3. ✖ Palliative care

4. ✔ Chemotherapy

Is Section Default? : null

Question Number : 26 Question Id : 97103627522 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is an element of evaluation in the Choice Based Credit System (CBCS)?

Options :

1. ✔ Continuous assessment

2. ✖ Multiple-choice questions

3. ✖ Final exams only

4. ✖ No grading system

Question Number : 27 Question Id : 97103627523 Display Question Number : Yes Is Question

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

During lecturing the class room teacher shall be highly cognizant about

Options :

1. ✖ Fixed posture

2. ✖ Proximity

3. ✖ Frequent pausing

4. ✔ Voice modulation

Question Number : 28 Question Id : 97103627524 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A majority of communication problems arise due to

Options :

1. ✔ Poor oral communication

2. ✖ Physical appearance

3. ✖ Facial expressions

4.

✖ Body language

Question Number : 29 Question Id : 97103627525 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following is an example of non-verbal communication

Options :

1. ✖ Question paper

2. ✖ Google form

3. ✖ SMS on mobile

4. ✔ Facial expression

Question Number : 30 Question Id : 97103627526 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

India's largest public sector broadcasting agency is

Options :

1. ✖ Doordarshan

2. ✖ PTI

3. ✔ Prasar Bharathi

4. ✖ TRAI

Question Number : 31 Question Id : 97103627527 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Among the options below, which one is not primarily used as a social networking platform

Options :

1. ✔ Dropbox

2. ✖ X

3. ✖ Reddit

4. ✖ Pinterest

Question Number : 32 Question Id : 97103627528 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of creating knowledge by transforming experiences is known as

Options :

1. ✖ Abstraction

2. ✖ Conceptualization

3. ✔ Learning

4. ✖ Experimentation

Question Number : 33 Question Id : 97103627529 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An assertive communication (either written or spoken) will be powerful when it is given as ____

Options :

1. ✔ 'I' message

2. ✖ 'We' message

3. ✖ 'You' message

4. ✖ 'They' message

Question Number : 34 Question Id : 97103627530 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two numbers are respectively 20% and 50% more than a third number.

The ratio of the two numbers is

Options :

1. ✔ 4:5

2. ✖ 2:5

3. ✖ 3:5

4. ✖ 6:7

Question Number : 35 Question Id : 97103627531 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The cost price of 25 articles is the same as the selling price of x articles. If the profit is 30%, then the value of x is

Options :

1. ✖ 15

2. ✔ 20

3. ✖ 18

4. ✖ 25

Question Number : 36 Question Id : 97103627532 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A fruit seller sold 40% of watermelons available with him and still left with 420 fruits. How many fruits had he originally ?

Options :

1. ✖ 588

2. ✖ 600

3. ✖ 143

4. ✔ 700

Question Number : 37 Question Id : 97103627533 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose the simple average of 20 numbers is zero. How many of these numbers can be greater than zero?

Options :

1. ✖ 0

2. ✖ 20

3. ✖ 10

4. ✔ 19

Question Number : 38 Question Id : 97103627534 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A man purchased a cow for Rs. 3000 and sold it the same day for Rs. 3600, allowing the buyer credit for 2 years. If the rate of interest is 10% per annum, then the man has a gain of

Options :

1. ✔ 0%

2. ✖ 5%

3. ✖ 7.5%

4. ✖ 10%

Question Number : 39 Question Id : 97103627535 Display Question Number : Yes Is Question

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

An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. At what speed it should travel in order to cover the same distance in 2 hours ?

Options :

1. ✖ 300 Kmph

2. ✖ 360 Kmph

3. ✖ 720 Kmph

4. ✔ 600 Kmph

Question Number : 40 Question Id : 97103627536 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What decimal of an hour is a second?

Options :

1. ✖ 0.0025

2. ✖ 0.0256

3. ✔ 0.00027

0.0002

4. ✖

Question Number : 41 Question Id : 97103627537 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of drawing general conclusions from a set of specific observations is called

Options :

1. ✔ Inductive logic

2. ✖ Analogy

3. ✖ Speculative logic

4. ✖ Evidence-based logic

Question Number : 42 Question Id : 97103627538 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Reasoning is an instrument whose purpose is to

Options :

1. ✖ Spread knowledge

Live in imaginary world

2. ✖

Anticipate unknown things

3. ✖

Grasp the unknown from the known

4. ✔

Question Number : 43 Question Id : 97103627539 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A statement that asserts all or some members of one category are included in the other category is called

Options :

Speculative statement

1. ✖

Predictive statement

2. ✖

Categorical statement

3. ✔

Non-deniable statement

4. ✖

Question Number : 44 Question Id : 97103627540 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following table and answer the questions based on it.
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

Year	Item of Expenditure (in Rs. lakhs)				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

What is the average amount of interest per year which the company had to pay during this period?

Options :

1. ✖ 32.43

2. ✖ 33.72

3. ✖ 34.18

4. ✔ 36.66

Question Number : 45 Question Id : 97103627541 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following table and answer the questions based on it.
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

Year	Item of Expenditure (in Rs. lakhs)				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

The total amount of bonus paid by the company during the given period is approximately what percent of the total amount of salary paid during this period?

Options :

1. ✖ 0.10

2. ✖ 0.50

3. ✔ 1.0

4. ✖ 1.25

Question Number : 46 Question Id : 97103627542 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following table and answer the questions based on it.
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

Year	Item of Expenditure (in Rs. lakhs)				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

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

Options :

1. ✖ 62

2. ✖ 66

3. ✔ 69

4. ✖ 71

Question Number : 47 Question Id : 97103627543 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following table and answer the questions based on it.
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

Year	Item of Expenditure (in Rs. lakhs)				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

The total expenditure of the company over these items during the year 2000 is?

Options :

1. ✔ 544.44

2. ✖ 501.11

3. ✖ 446.46

4. ✖ 478.87

Question Number : 48 Question Id : 97103627544 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following table and answer the questions based on it.
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

Year	Item of Expenditure (in Rs. lakhs)				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately?

Options :

1. ✖ 4:7

2. ✔ 10:13

3. ✖ 15:18

4. ✖ 5:8

Question Number : 49 Question Id : 97103627545 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is not a search engine

Options :

1. ✖ Google

2. ✖ Yahoo

3. ✔ One-drive

4. ✖ Bing

Question Number : 50 Question Id : 97103627546 Display Question Number : Yes Is Questi

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

The standard protocol for internet is

Options :

1. ✖ Java

2. ✖ HTML

3. ✖ FTTP

4. ✔ TCP/IP

Question Number : 51 Question Id : 97103627547 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A popular term related to the design of a digital learning environment is

Options :

1. ✖ LMS

2. ✔ E-kalpa

3. ✖ E-commerce

4. ✖ E-tendering

Question Number : 52 Question Id : 97103627548 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Government of India created an initiative to encourage scientific temper among students, known as ATL, whose full expansion is

Options :

1. ✖ Atal Technology Lab

2. ✔ Atal Tinkering Lab

3.

✖ Applied Techno Lab

4. ✖ Applied Technology Lab

Question Number : 53 Question Id : 97103627549 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is a web browser

Options :

1. ✖ Microsoft Windows

2. ✖ Google Drive

3. ✔ Google Chrome

4. ✖ HTML

Question Number : 54 Question Id : 97103627550 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Online courses through NPTEL platform are offered by

Options :

1. ✖ NITs

2. ✖ IIPA

3. ✖ IIMs

4. ✔ Jointly IITs and IISc

Question Number : 55 Question Id : 97103627551 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The chief objective of the PARAM Shavak of the Government of India is to provide

Options :

1. ✖ MOOCs in all subjects

2. ✖ Database of theses and dissertations

3. ✔ Affordable supercomputing facilities for research

4. ✖ Knowledge base for start-ups

Question Number : 56 Question Id : 97103627552 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The movement of topsoil and litter from one place to another is known as

Options :

1. ✔ Soil erosion

2. ✖ Soil submersion

3. ✖ Soil pollution

4. ✖ Soil pulling

Question Number : 57 Question Id : 97103627553 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The hearing sensitivity of human ear is

Options :

1. ✖ 3-6 kHz

2. ✔ 2-5 kHz

3. ✖ 10-50 kHz

4. ✖ 50-100 kHz

Question Number : 58 Question Id : 97103627554 Display Question Number : Yes Is Question

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

The organic material in solid waste is decomposed by

Options :

1. ✖ Soil particles

2. ✖ Oxidation

3. ✖ Flow of water

4. ✔ The action of microorganisms

Question Number : 59 Question Id : 97103627555 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The oldest commonly followed method to dump solid waste is

Options :

1. ✔ Landfill

2. ✖ Burning

3. ✖ River flow

4. ✖ Drying in open air

Question Number : 60 Question Id : 97103627556 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The harmful pollutant released by petrol/diesel vehicles is

Options :

1. ✖ Carbon Dioxide

2. ✖ Ozone

3. ✔ Carbon Monoxide

4. ✖ Nitrogen Oxide

Question Number : 61 Question Id : 97103627557 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One of the following is not a result of global warming

Options :

1. ✖ Melting glaciers

2. ✔ Population growth

3. ✖ Raising sea levels

Heat waves

4. ✖

Question Number : 62 Question Id : 97103627558 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 mostly responsible to global warming?

Options :

1. ✖ Deforestation

2. ✖ Erosion of sea coasts

3. ✔ Fossil fuel combustion

4. ✖ Agriculture

Question Number : 63 Question Id : 97103627559 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sort the following countries in the decreasing order of carbon dioxide emissions

A. North America

B. Africa

C. Europe

D. Asia

Options :

1. ✖ DBCA

2. ✖ ADCB

3. ✔ DACB

4. ✖ BADC

Question Number : 64 Question Id : 97103627560 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The international agreement on reducing greenhouse emissions, is known as

Options :

1. ✖ NATO

2. ✖ COP 21 agreement

3. ✔ Convention on Biological Diversity

4. ✖ Montreal agreement

Question Number : 65 Question Id : 97103627561 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Montreal Protocol on ozone layer protection came into effect in the year

Options :

1. ✔ 1989

2. ✖ 1998

3. ✖ 1978

4. ✖ 1987

Question Number : 66 Question Id : 97103627562 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The first earth summit on biological diversity was held in

Options :

1. ✖

India

2. ✖ USA

3. ✖ South Africa

4. ✔ Brazil

Question Number : 67 Question Id : 97103627563 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 a conventional learning programme in India?

Options :

1. ✖ Yoga

2. ✔ Agriculture

3. ✖ Journalism

4. ✖ Artificial Intelligence

Question Number : 68 Question Id : 97103627564 Display Question Number : Yes Is Question

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

The 24-hour educational programme launched in 2020 and telecast in India is termed as

Options :

1. ✔ Gyan Darshan

2. ✖ NPTEL

3. ✖ SASTRA

4. ✖ SWAYAM

Question Number : 69 Question Id : 97103627565 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The quality of Technical and Management education in India is monitored by

Options :

1. ✖ ICMR

2. ✖ NAAC

3. ✖ UGC

4. ✔ AICTE

Question Number : 70 Question Id : 97103627566 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Medical Council of India is recently renamed as

Options :

1. ✖ Indian Medical Association

2. ✖ ICMR

3. ✔ National Medical Commission

4. ✖ Pharmacy Council of India

CHEMICAL SCIENCES

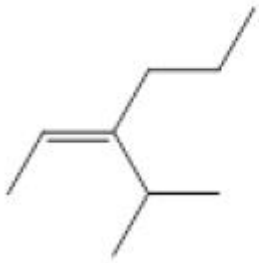
Section Id :	971036392
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	70
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Maximum Instruction Time : 0

Is Section Default? : null

Question Number : 71 Question Id : 97103627567 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 IUPAC name of following compound?



Options :

1. ✖ E-3-isopropyl-2-hexene

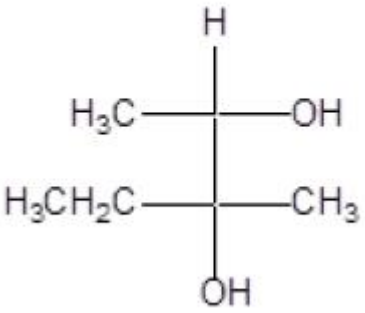
2. ✔ Z-3- isopropyl-2-hexene

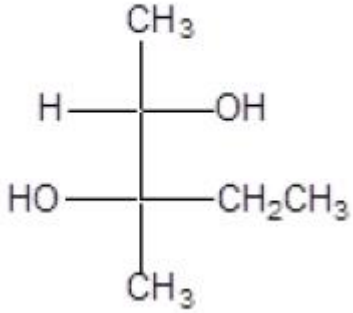
3. ✖ *cis*-3-isopropyl-2-hexene

4. ✖ *trans*-3-(1-methylethyl)-2-hexene

Question Number : 72 Question Id : 97103627568 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The two molecules shown below are





Options :

1. ✖ Identical

2. ✖ Enantiomers

3. ✔ Diastereomers

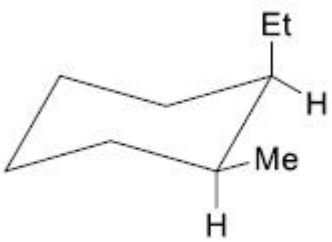
4. ✖ Asymmetrical

Question Number : 73 Question Id : 97103627569 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

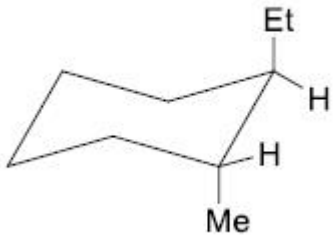
The most stable conformational isomer of *trans*-1-ethyl-2-methylcyclohexane will be

Options :

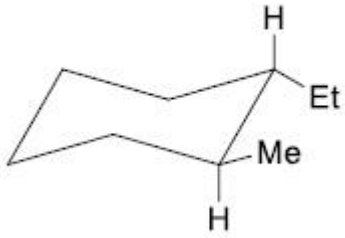
1. ✖



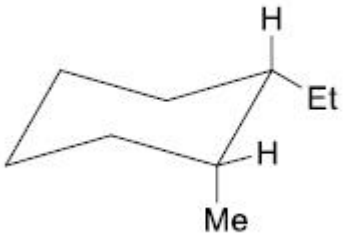
2. ✖



3. ✔



4. ✖

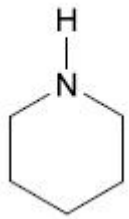


Question Number : 74 Question Id : 97103627570 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

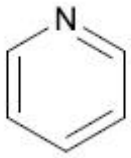
Which of the following compounds is the best Brønsted base?

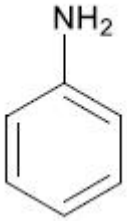
Options :

1. ✔

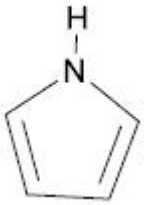


2. ✖





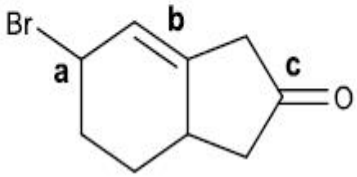
3. ✖



4. ✖

Question Number : 75 Question Id : 97103627571 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 functional groups on the following molecule are susceptible to nucleophilic attack?



Options :

1. ✖ "a" and "b"

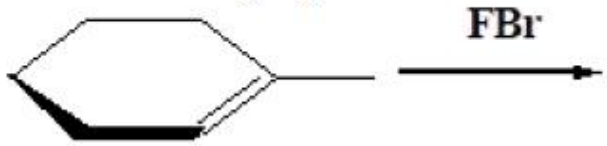
2. ✔ "a" and "c"

3. ✖ "b" and "c"

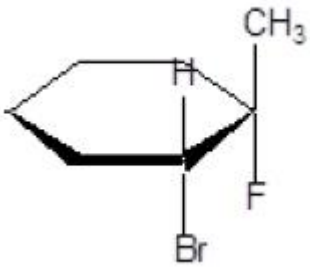
4. ✖ "a", "b" and "c"

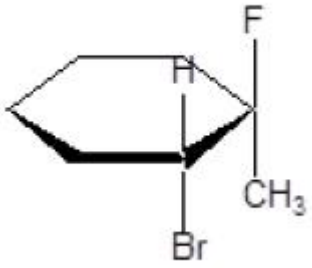
Question Number : 76 Question Id : 97103627572 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the major product obtained from the following reaction?

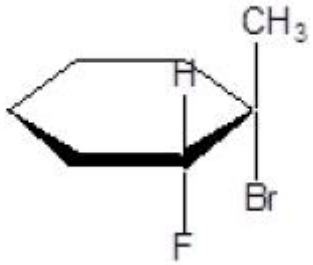


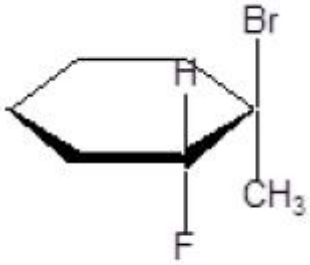
Options :

1. ✖ 

2. ✔ 

3. ✖





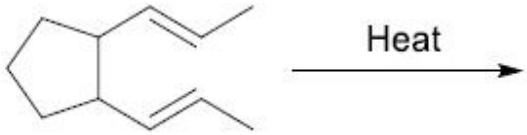
4. ✖

Question Number : 77 Question Id : 97103627573 Display Question Number : Yes Is Questi

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

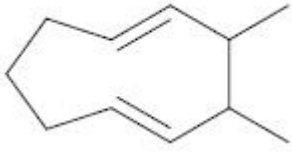
Time : 0

What is the major product obtained from the following reaction?

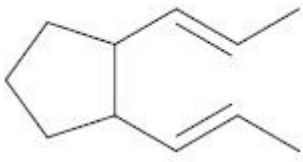


Options :

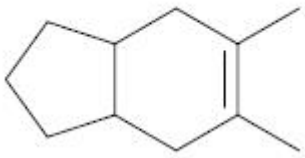
1. ✔



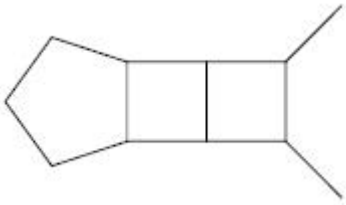
2. ✖



3. ✖

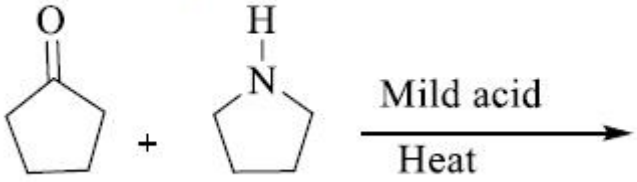


4. ✖



Question Number : 78 Question Id : 97103627574 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 product of the following reaction?

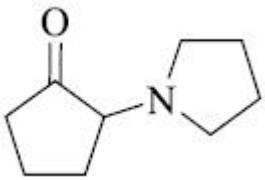


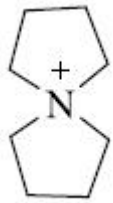
Options :

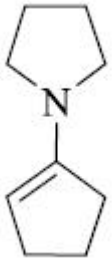
1. ✖



2. ✖



3. ✖ 

4. ✔ 

Question Number : 79 Question Id : 97103627575 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In Benzoin condensation CN^- is chosen rather than OH^- because CN^- is better

Options :

1. ✖ Nucleophile

2. ✖ Leaving group

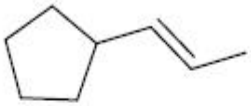
3. ✖ Dehydrating agent

4. ✔ "1" and "2"

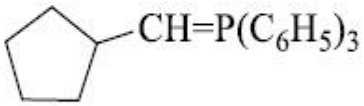
Question Number : 80 Question Id : 97103627576 Display Question Number : Yes Is Question

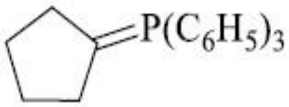
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which Wittig reagent would be used to synthesize ?



1) $CH_3CH{=}P(C_6H_5)_3$

2) 

3) 

4) $CH_3CH_2CH{=}P(C_6H_5)_3$

Options :

1. ✔ "1" and "2"

2. ✖ "3" and "4"

3. ✖ "1" and "3"

4. ✖ "2" and "4"

Question Number : 81 Question Id : 97103627577 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The steps involved in Robinson Annulation are

Options :

1. ✖ Aldol reaction followed by Michael addition

2. ✔ Michael addition followed by Aldol condensation

3. ✖ Michael addition and Aldol condensation occur simultaneously

4. ✖ Only Michael addition involved in it.

Question Number : 82 Question Id : 97103627578 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which reagent can be used in Knoevenagel condensation?

Options :

1. ✖ Ethyl acetoacetate

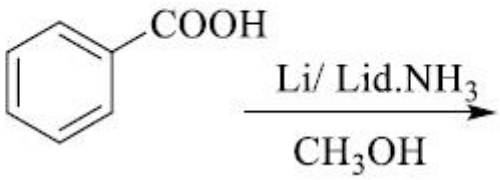
2. ✖ Diethyl oxalate

3. ✖ Diethyl tartarate

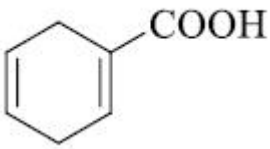
4. ✔ Diethyl malonate

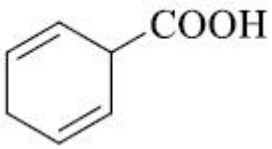
Question Number : 83 Question Id : 97103627579 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

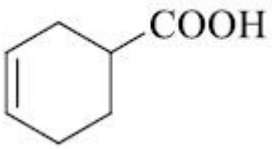
What is the product of following reaction?

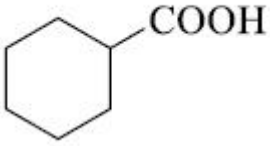


Options :

1. ✖ 

2. ✔ 

3. ✖ 

4. ✖ 

Question Number : 84 Question Id : 97103627580 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which reaction can be used to synthesize Cinnamic acid?

Options :

1. ✖ Stobbe condensation

2. ✖ Claisen condensation

3. ✔ Perkin reaction

4. ✖ Haloform reaction

Question Number : 85 Question Id : 97103627581 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wilkinson catalyst can be used in

Options :

1. ✔ Hydrogenation

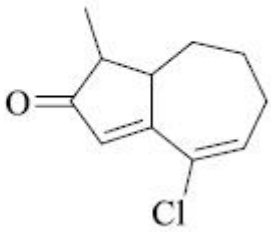
2. ✖ Dehydrogenation

3. ✖ Transfer hydrogenation

4. ✖ Hydroformylation

Question Number : 86 Question Id : 97103627582 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The λ_{max} for the following compound is



Options :

1. ✔ 284 nm

2. ✖ 202 nm

3. ✖ 215 nm

4. ✖ 302 nm

Question Number : 87 Question Id : 97103627583 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The point group symmetry of BrF_5 is

Options :

1. ✖ D_{3h}

2. ✔ C_{4v}

3. ✖ D_{4v}

4. ✖ C_{3v}

Question Number : 88 Question Id : 97103627584 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the empirical formula of a compound is $Cr(CO)_3(C_6H_5)_2$, what is the appropriate electron count for the stable compound ?

Options :

1. ✖ 24 e-

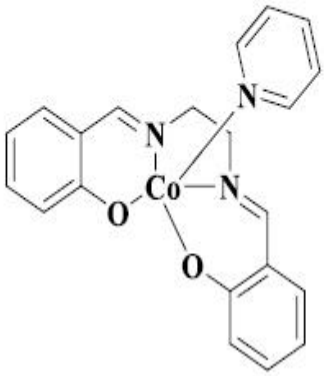
2. ✖ 16 e-

3. ✔ 18 e-

4. ✖ 32 e-

Question Number : 89 Question Id : 97103627585 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 EPR lines theoretically expected in a solution spectrum of the following compound are



Options :

1. ✖ 4

2. ✔ 21

3. ✖ 7

4. ✖ 1

Question Number : 90 Question Id : 97103627586 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the Wade's rule, the condition for the formation of a Nido borane is

Options :

1. ✖ 2n+6

2. ✖ 2n+8

3. ✔ 2n+4

4. ✖ 2n+2

Question Number : 91 Question Id : 97103627587 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The trigger in Perutz mechanism in a dioxygen free heme is

Options :

1. ✖ Fe(II) L. S

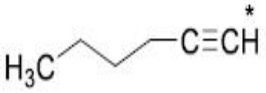
2. ✔ Fe(II) H. S

3. ✖ Fe(III) L. S

4. ✖ Fe(III) H.S

Question Number : 92 Question Id : 97103627588 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 multiplicity expected in the hydrogen NMR spectrum for the hydrogen atoms marked by a "star" in the following compound ?



Options :

1. ✖ Singlet

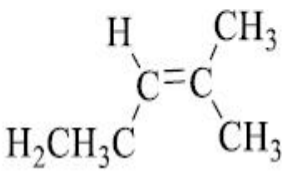
2. ✔ Triplet

3. ✖ Quartet

4. ✖ Heptet

Question Number : 93 Question Id : 97103627589 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many absorptions will the following compound have in its carbon NMR spectrum?



Options :

1. ✔ 6

2. ✖

5

3. ✖ 4

4. ✖ 3

Question Number : 94 Question Id : 97103627590 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which element has the highest first ionization energy?

Options :

1. ✖ Sodium

2. ✖ Aluminum

3. ✖ Calcium

4. ✔ Phosphorus

Question Number : 95 Question Id : 97103627591 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which set of elements contains a metalloid?

Options :

1. ✔ K, Mn, As, Ar

2. ✖ Li, Mg, Ca, Kr

3. ✖ Ba, Ag, Sn, Xe

4. ✖ Fr, F, O, Rn

Question Number : 96 Question Id : 97103627592 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two moles of oxygen is mixed with eight moles of helium. The effective specific heat of the mixture at constant volume is

Options :

1. ✖ 1.3 R

2. ✖ 1.4 R

3. ✔ 1.7 R

4. ✖ 1.9 R

Question Number : 97 Question Id : 97103627593 Display Question Number : Yes Is Question

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

A Carnot engine with sink's temperature at 17 °C has 50% efficiency. How much should its source temperature be changed to increase its efficiency to 60%?

Options :

1. ✖ 225 K

2. ✖ 128 °C

3. ✖ 580 K

4. ✔ 145 K

Question Number : 98 Question Id : 97103627594 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A closed gas cylinder is divided into two parts by a piston held tight. The pressure and volume of gas in two parts respectively are (P, 5V) and (10 P, V). If now the piston is left free and the system undergoes isothermal process, the volume of the gas in two parts respectively are

Options :

1. ✔ 2 V, 4 V

2. ✖ 3 V, 3 V

3. ✖ 5 V, V

4. ✖ 4 V, 2 V

Question Number : 99 Question Id : 97103627595 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The half life period of decomposition of a compound is 50 minutes. If the initial concentration is halved, the half life period is reduced to 25 minutes. What is the order of the reaction?

Options :

1. ✖ 0

2. ✖ 3

3. ✖ 2

4. ✔ 1

Question Number : 100 Question Id : 97103627596 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Green house effect is due to the following gas

Options :

1. ✖ CO

2. ✔ CH_4

3. ✖ H_2

4. ✖ NH_4

Question Number : 101 Question Id : 97103627597 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify p, c and f for an aqueous solution of HCl in equilibrium with its vapor.

Options :

1. ✖ 2,2,3

2. ✖ 1,1,1

3. ✔ 2,2,2

4. ✖ 2,1,3

Question Number : 102 Question Id : 97103627598 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The units of rate constant of third order reaction is

Options :

1. ✔ $Mol^{-2}\ L^{2}\ s^{-1}$

2. ✖ $mol^{1}\ L^{-1}\ s^{-1}$

3. ✖ $L\ M^{-1}\ s^{-1}$

4. ✖ $mol^{1}\ L^{-2}\ s$

Question Number : 103 Question Id : 97103627599 Display Question Number : Yes Is Quest  **Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The packing efficiency for the following cubic structures varies as follows:

Diamond (D), Simple Cubic (SC), Face Centered Cube (FCC), Body Centered Cube (BCC)

Options :

1. ✖ D > FCC > BCC > SCC

2. ✔ FCC > BCC > SCC > D

3. ✖ BCC > FCC > SCC > D

4. ✖ D > SCC > BCC > FCC

Question Number : 104 Question Id : 97103627600 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The eutectic composition of lead- silver system is

Options :

1. ✖ 2.6 % Pb, 97.4 % Ag

2. ✔ 2.6 % Ag, 97.4 % Pb

3. ✖ 50 % Pb, 50 % Ag

4. ✖ 2.6 % Ag, 50 % Pb

Question Number : 105 Question Id : 97103627601 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Calculate the rms velocity of oxygen at 0 °C

Options :

1. ✖ 36,130 cm/s

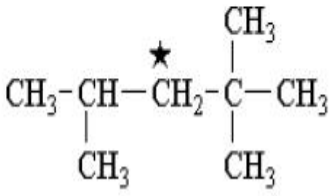
2. ✖ 26,130 cm/s

3. ✔ 46,130 cm/s

4. ✖ 0

Question Number : 106 Question Id : 97103627602 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pick the ^{13}C-NMR absorption of the carbon atom marked by the star in the following compound



Options :

1. ✖ 34 ppm

2. ✔ 53 ppm

3. ✖ 74 ppm

4. ✖ 64 pm

Question Number : 107 Question Id : 97103627603 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

In the UV –Visible absorption spectrum of an α,β-unsaturated carbonyl compound, with increasing solvent polarity

Options :

1. ✖ both n-π* and π-π* transitions undergo bathochromic shift.

2. ✖ n-π* transitions undergo bathochromic shift, π-π* transitions undergo hypsochromic shift.

3. ✔ n-π* transitions undergo hypsochromic shift, π-π* transitions undergo bathochromic shift.

4. ✖ both n-π* and π-π* transitions undergo hypsochromic shift.

Question Number : 108 Question Id : 97103627604 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Oxygen over potential at a polished platinum anode in acid solution with current densities of 0.02 – 0.03 A cm^{-2} used in electrogravimetric analysis will be

Options :

1. ✔ 0.4 – 0.5 volt

2. ✖ 0.1 – 0.3 volt

3. ✖ 0.2 – 0.3 volt

4. ✖ 0.5 – 0.6 volt

Question Number : 109 Question Id : 97103627605 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The conductivity of pure water is about

Options :

1. ✖ $4 \times 10^{-8}\ \Omega^{-1}cm^{-1}$

2. ✔ $5 \times 10^{-8}\ \Omega^{-1}cm^{-1}$

3. ✖ $6 \times 10^{-8}\ \Omega^{-1}cm^{-1}$

4. ✖ $7 \times 10^{-8}\ \Omega^{-1}cm^{-1}$

Question Number : 110 Question Id : 97103627606 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which among the following is the process of removing a gas from a solution by bubbling an inert gas through the solution?

Options :

1. ✔ Sparging

2. ✖ Sputtering

3. ✖ Solvation

4. ✖ Solubility

Question Number : 111 Question Id : 97103627607 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Abbreviate TISAB used in potentiometry

Options :

1. ✖ Total iodide solution adjusting buffer

2. ✖ Total input storage adjustable battery

3. ✖ Total ion selective adjustment battery

4. ✔ Total ionic strength adjustment buffer

Question Number : 112 Question Id : 97103627608 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Karl Fischer reagent used for the determination of water is prepared by

Options :

1. ✖ $C_5H_5N + Cl_2 + NO_2 + CH_3OH$

2. ✖ $C_5H_5N + Cl_2 + SO_3 + CH_3OH$

3. ✖ $C_5H_5N + Br_2 + CO_2 + CH_3OH$

4. ✔ $C_5H_5N + I_2 + SO_2 + CH_3OH$

Question Number : 113 Question Id : 97103627609 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 formula is used to calculate student's t-test?

Options :

1. ✖ $t = y - \mu/s$

2. ✖ $t = \mu - x/s$

3. ✖ $t = s - \mu/x$

4. ✔ $t = x - \mu/s$

Question Number : 114 Question Id : 97103627610 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Dithiol used as colorimetric reagent is usually called as

Options :

1. ✖ Toluene-1,2-dithiol

2. ✔ Toluene-3,4-dithiol

3. ✖ Xylene-3,4-dithiol

4. ✖ Xylene -1,2-dithiol

Question Number : 115 Question Id : 97103627611 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

Which among the following is a thermal detector that depends upon a change in thermal conductivity of the mobile phase in the presence of analytes?

Options :

1. ✔ Katharometer

2. ✖ Thermionic detector

3. ✖ Thermostatic detector

4. ✖ Photoionization detector

Question Number : 116 Question Id : 97103627612 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The relative error in a complexometric titration is obtained from the formula

Options :

1. ✖ $E = [(p-1) - (p+1)] \times 100\%$

2. ✖ $E = (p-1)/(p+1) \times 100\%$

3. ✖ $E = (p+1) \times 100\%$

4. ✔ $E = (p-1) \times 100\%$

Question Number : 117 Question Id : 97103627613 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In polarography the small charging current observed in the absence of a reactive species is

Options :

1. ✖ Migration current

2. ✖ Limiting current

3. ✔ Residual current

4. ✖ Diffusion current

Question Number : 118 Question Id : 97103627614 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the mass spectrum of ethyl benzene, prominent peaks appear at m/z 106, 91 and 65.

Which of the species below is not responsible for these peaks ?

Options :

1. ✖ Ethyl benzene

2. ✔ Ethene

3. ✖ Tropylium cation

4. ✖ $C_5H_5^+$

Question Number : 119 Question Id : 97103627615 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 will not show an EPR spectra?

Options :

1. ✖ O_2

2. ✖ N_2 Trapped in C_{60}

3. ✔ C_2H_5

4. ✖ $CuCl_2$

Question Number : 120 Question Id : 97103627616 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 nuclei will have a magnetic moment?

Options :

1. ✔ ^{2}D

2. ✖ ^{16}O

3. ✖ ^{12}C

4. ✖ ^{32}S

Question Number : 121 Question Id : 97103627617 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which ordering correctly shows the variation in rates of water exchange in high-spin aqua complexes $[M(OH_2)_6]^{n+}$?

Options :

1. ✖ $Co^{2+} > Cr^{2+}$

2. ✖ $V^{2+} > Co^{2+}$

3. ✖ $Cr^{3+} > Fe^{3+}$

4. ✔ $Cr^{2+} > Cr^{3+}$

Question Number : 122 Question Id : 97103627618 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An IR band corresponding to the Co–H stretching is observed at 1840 cm^{-1} for $[Co(CN)_5H]^{3-}$. The expected wave number of the corresponding band in $[Co(CN)_5D]^{3-}$ is

Options :

1. ✖ $1650\ cm^{-1}$

2. ✖ $1301\ cm^{-1}$

3. ✖ $1580\ cm^{-1}$

4. ✔ $1847\ cm^{-1}$

Question Number : 123 Question Id : 97103627619 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 IR frequencies is the closest to that of a triply bridged CO group?

Options :

1. ✔ $1700\ cm^{-1}$

2. ✖ $1810\ cm^{-1}$

3. ✖ $1920\ cm^{-1}$

4. ✖ $2140\ cm^{-1}$

Question Number : 124 Question Id : 97103627620 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 complex ions shows the minimum intensity of absorption in the UV-Visible region?

Options :

1. ✖ $[Cr(H_2O)_6]^{2+}$

2. ✖ $[V(H_2O)_6]^{2+}$

3. ✔ $[Mn(H_2O)_6]^{2+}$

4. ✖ $[Co(H_2O)_6]^{2+}$

Question Number : 125 Question Id : 97103627621 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Among the species given, the one possessing charge-transfer transition in the visible region is

Options :

1. ✖ $[Th(C_2O_4)_2]$

2. ✔ $[Cr(NCS)_6]^{3-}$

3. ✖ ZnS

4. ✖ HgI_2

Question Number : 126 Question Id : 97103627622 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The metal borides that contain isolated boron atoms are

Options :

1. ✔ Tc_7B_3 and Re_7B_3

2. ✖ Cr_5B_3 and V_3B_2

3. ✖ Ti_4B_4 and V_3B_4

4. ✖ TiB and HfB

Question Number : 127 Question Id : 97103627623 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 Lewis acid strengths of BF_2Cl, BFClBr, BF_2Br and $BFBr_2$ is

Options :

1. ✖ $BF_2Cl > BFClBr > BF_2Br > BFBr_2$

2. ✔ $BFBr_2 > BFClBr > BF_2Br > BF_2Cl$

3. ✖ $BF_2Cl > BF_2Br > BFClBr > BFBr_2$

4. ✖ $BFClBr > BFBr_2 > BF_2Cl > BF_2Br$

Question Number : 128 Question Id : 97103627624 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The value of the magnetic quantum number of a *px* orbital is

Options :

1. ✖ -1

2. ✖ 0

3. ✖ $+1$

4. ✔ undefined

Question Number : 129 Question Id : 97103627625 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of state for one mole of a gas is given by P(V-b) = RT, where b and R are constants. The value of $\left(\frac{\partial H}{\partial P}\right)_T$ is

Options :

1. ✖ V-b

2. ✔ b

3. ✖ 0

4. ✖ $\frac{RT}{P} + b$

Question Number : 130 Question Id : 97103627626 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 functions below is the common eigen function of $\frac{d}{dx}$ and $\frac{d^2}{dx^2}$ operators?

Options :

1. ✖ $\cos x$

2. ✖ kx

3. ✔ e^{ix}

4. ✖ $e - x^2$

Question Number : 131 Question Id : 97103627627 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 $H_2O(g) \rightleftarrows H_2(g) + \frac{1}{2}O_2(g)$, the equilibrium constant (K_p) depends on the degree of dissociation α ($\alpha \ll 1$) and pressure p as

Options :

1. ✔ $K_p \propto p^{1/2}\alpha^{3/2}$

2. ✖ $K_p \propto p\alpha^2$

3. ✖ $K_p \propto p\alpha$

4. ✖ $K_p \propto p^2\alpha^{3/2}$

Question Number : 132 Question Id : 97103627628 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Probability density of a wavefunction, $\psi(\phi) = \frac{1}{\sqrt{2\pi}} e^{-i\phi}$ within $0 \leq \phi \leq 2\pi$ is

Options :

1. ✖ $\frac{1}{\sqrt{2\pi}}$

2. ✖ $\frac{1}{2\pi}$

3. ✖ 2π

4. ✔ 1

Question Number : 133 Question Id : 97103627629 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The energy required for a transition between the rotational levels J=1 and J=2 of a molecule is (where B is the rotational constant of the molecule)

Options :

1. ✖ $B\ cm^{-1}$

2. ✖ $2B\ cm^{-1}$

3. ✔ $4B\ cm^{-1}$

4. ✖ $B/2\ cm^{-1}$

Question Number : 134 Question Id : 97103627630 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ilkovic equation used for finding out the diffusion current at the dropping mercury electrode is

Options :

1. ✔ $(i_d)_{max} = 708nD^{1/2}m^{2/3}t^{1/6}c$

2. ✖ $(i_d)_{max} = 708nD^{1/2}m^{3/2}t^{1/3}c$

3. ✖ $(i_d)_{max} = 708nD^{1/2}m^{1/3}t^{1/5}c$

4. ✖ $(i_d)_{max} = 708nD^{1/2}m^{5/3}t^{1/5}c$

Question Number : 135 Question Id : 97103627631 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The relation between entropy (S) and thermodynamic probability (Ω) is

Options :

1. ✖ $S = \frac{k}{log\Omega}$

2. ✖ $\Omega = klogS$

3. ✖ $\Omega = \frac{k}{logS}$

4. ✔ $S = klog\Omega$

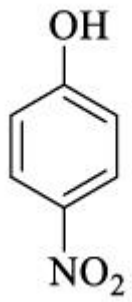
Question Number : 136 Question Id : 97103627632 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following compounds does not follow Hammett equation during ionization?

Options :

1. ✖ 

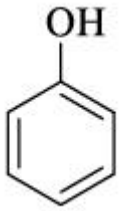
2. ✔



3. ✖

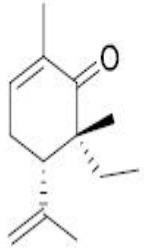


4. ✖



Question Number : 137 Question Id : 97103627633 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The absolute configuration of the two stereogenic (chiral) centers in the following molecule is



Options :

1. ✖ 5R, 6R

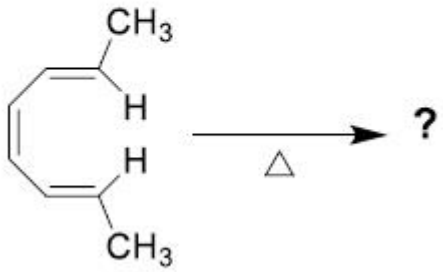
2. ✖ 5R, 6S

3. ✔ 5S, 6R

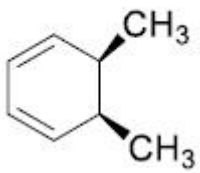
4. ✖ 5S, 6S

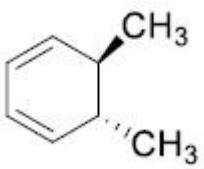
Question Number : 138 Question Id : 97103627634 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

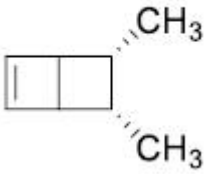
Mention the exact product of the following reaction.

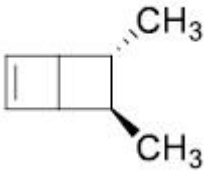


Options :

1. ✔ 

2. ✖ 

3. ✖ 

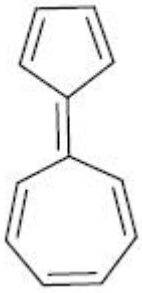
4. ✖ 

Question Number : 139 Question Id : 97103627635 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

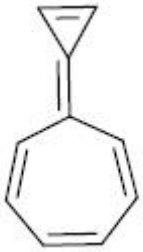
Which one has highest dipole moment.

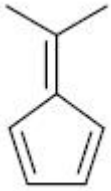
Options :

1. ✖ 

2. ✔ 

3. ✖

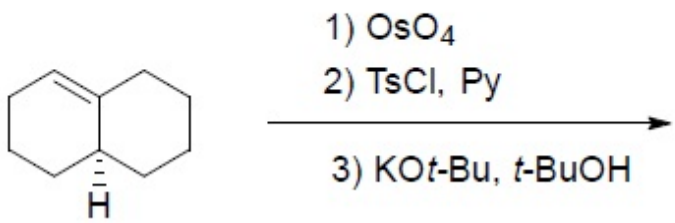




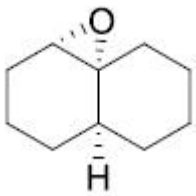
4. ✖

Question Number : 140 Question Id : 97103627636 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

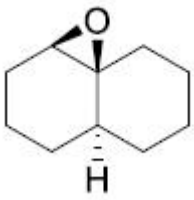
The major product formed in the following reaction sequence is



Options :

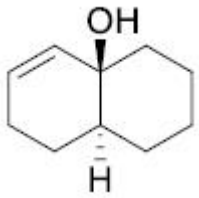


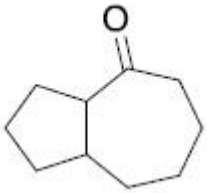
1. ✖



2. ✖

3.



4. 

Entrance Exams

- Agricultural Entrance Exams
- Architecture Entrance Exam
- Arts and Humanities Entrance Exams
- Commerce Entrance Examinations
- Common Entrance Examinations
- Computer Application Entrance Exams
- Design Entrance Exams
- Education Entrance Exams
- Engineering Entrance Exams
- Hotel Management Entrance Exams
- Law Entrance Exams
- MBA Entrance Exams
- Media & Journalism Entrance Exams
- Medical Entrance Exams
- Nursing Entrance Exams
- Pharmacy Entrance Exams
- Science Entrance Exams
- Diploma & Polytechnic
- Lateral Entry