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 :	MATERIAL SCIENCE AND NANOTECHNOLOGY 3rd 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 :	971036439
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 : 97103630880 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the main objective of teaching?

Options :

1. ✖ To give information related to the syllabus

2. ✖ Help the students in getting jobs

3. ✔ To develop thinking capability of students

4. ✖ Prepare the students for examination.

Question Number : 2 Question Id : 97103630881 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a level of teaching learning?

Options :

1. ✖ Memory level

2. ✔ Differentiation level

3. ✖ Reflective level

4. ✖ Understanding level

Question Number : 3 Question Id : 97103630882 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An effective teacher will ensure_____

Options :

1. ✖ Laissez-failure

2. ✖ Competition among students

3. ✔ Competition or cooperation as the situation demands

4. ✖ Cooperation among his students

Question Number : 4 Question Id : 97103630883 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Morphograph is the term associated with_____

Options :

1. ✔ Corrective spelling

2. ✖ Corrective learning

3. ✖ Corrective behavior

4. ✖ Corrective reading

Question Number : 5 Question Id : 97103630884 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 associated with micro-teaching ?

Options :

1. ✖ Knowledge acquiring

2. ✖ Skill training

3. ✔ Atomic teaching procedure

4. ✖ Content transfer

Question Number : 6 Question Id : 97103630885 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The main aim of 'National Council for Teacher Education' is_____

Options :

1. ✖ To promote research in education

2. ✔ To maintain standards in colleges of education

3. ✖ To provide grant to colleges of education

4. ✖ To open colleges in education

Question Number : 7 Question Id : 97103630886 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 Massive Open Online Course (MOOCs) platform created by the MHRD, Govt. of India?

Options :

1. ✔ SWAYAM

2. ✖ PRATHAM

3. ✖ OPEN LEARN

4. ✖ FUTURE LEARN

Question Number : 8 Question Id : 97103630887 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following does not belong to a projected aid?

Options :

1. ✖ Overhead projector

2. ✔ Black board

3. ✖ Epidiascope

4. ✖ Slide projector

Question Number : 9 Question Id : 97103630888 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The purpose of formative evaluation is to_____

Options :

1. ✔ Accelerate student's learning performance

2. ✖ Provide a feedback to teacher effectiveness

3. ✖ Grade students learning outcomes

4. ✖ Check student's performance graph

Question Number : 10 Question Id : 97103630889 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Assertion (A): Learning is a lifelong process

Reason (R): Learning to be useful must be linked with life process.

Choose correct answer from the following

Options :

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

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

3. ✖ (A) is true, but (R) is false

4. ✖ (A) is false, but (R) is true

Question Number : 11 Question Id : 97103630890 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

'Gyan Darshan' launched by IGNOU refers to which one of the following?

Options :

1. ✔ Satellite based educational T.V. channel

2. ✖ Educational F.M radio network

3. ✖ Global initiative of academic networks

4. ✖ Online courses

Question Number : 12 Question Id : 97103630891 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 sets of activities best indicate the cyclic nature of action research strategy?

Options :

1. ✖ Reflect, Observe, Plan, Act

2. ✔ Plan, Act, Observe, Reflect

3. ✖ Act, Plan, Observe, Reflect

4. ✖ Observe, Act, Reflect, Plan

Question Number : 13 Question Id : 97103630892 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Which of the following research types has a potential for enhancing teaching competencies?

Options :

1. ✖ Fundamental research

2. ✖ Applied research

3. ✖ Impact assessment research

4. ✔ Action research

Question Number : 14 Question Id : 97103630893 Display Question Number : Yes Is Questi

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

Time : 0

Which of the following is the main aim of interdisciplinary research?

Options :

1. ✔ To bring out holistic approach to research

2. ✖ To over simplify the problem of research

3. ✖ To reduce the emphasis of single subject in research domain

4. ✖ To create a new trend in research methods

Question Number : 15 Question Id : 97103630894 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Manipulation is always a part of_____

Options :

1. ✖ Fundamental research

2. ✖ Descriptive research

3. ✔ Experimental research

4. ✖ Historical research

Question Number : 16 Question Id : 97103630895 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A thesis statement is_____

Options :

1. ✖ A fact

2. ✖ An observation

3. ✖ A discussion

4. ✔ An Assumption

Question Number : 17 Question Id : 97103630896 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 an indication of the quality of a research journal?

Options :

1. ✖ g-index

2. ✖ h-index

3. ✔ impact factor

4. ✖ i10-index

Question Number : 18 Question Id : 97103630897 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A hypothesis is a_____

Options :

1. ✖ Postulate

2. ✖ Law

3. ✖ Canon

4. ✔ Supposition

Question Number : 19 Question Id : 97103630898 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ethical norms in research do not involve guidelines for_____

Options :

1. ✖ Copyright

2. ✔ Thesis format

3. ✖ Patenting policy

4. ✖ Data sharing policies

Question Number : 20 Question Id : 97103630899 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 research tool?

Options :

1. ✖ Illustration

2. ✖ Graph

3. ✔ Questionaire

4. ✖ Diagram

Is Section Default? : null

Question Id : 97103630900 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 Passage and answer the following questions:

The Taj Mahal has become one of the world's best known monuments. This domed white marble structure is situated on a high plinth at the southern end of a four-quartered garden, evoking the gardens of paradise, enclosed within walls measuring 305 by 549 metres. Outside the walls, in an area known as Mumtazabad, were living quarters for attendants, markets, serais and other structures built by local merchants and nobles. The tomb complex and the other imperial structures of Mumtazabad were maintained by the income of thirty villages given specifically for the tomb's support. The name Taj Mahal is unknown in Mughal chronicles, but it is used by contemporary Europeans in India, suggesting that this was the tomb's popular name. In contemporary texts, it is simply called the illuminated tomb (Rauza-i-Munavvara).

Mumtaz Mahal died shortly after delivering her fourteenth child in 1631. The Mughal court was then residing in Burhanpur. Her remains were temporarily buried by the grief-stricken emperor in a spacious garden known as Zainabad on the bank of the river Tapti. Six months later, her body was transported to Agra, where it was interred in land chosen for the mausoleum. This land, situated south of the Mughal city on the bank of the Jamuna, had belonged to the Kachwaha rajas since the time of Raja Man Singh and was purchased from the then current raja, Jai Singh. Although contemporary chronicles indicate Jai Singh's willing cooperation in this exchange, extant farmans (imperial commands) indicate that the final price was not settled until almost two years after the mausoleum's commencement. Jai Singh's further cooperation was insured by imperial orders issued between 1632 and 1637 demanding that he provide stone masons and carts to transport marble from the mines at Makrana, within his 'ancestral domain', to Agra where both the Taj Mahal and Shah Jahan's additions to the Agra fort were constructed concurrently.

Work on the mausoleum was commenced early in 1632. Inscriptional evidence indicates much of the tomb was completed by 1636. By 1643, when Shah Jahan most lavishly celebrated the 'Urs ceremony for Mumtaz Mahal', the entire complex was virtually complete.

Sub questions

Question Number : 21 Question Id : 97103630901 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Marble stone used for the construction of Taj Mahal was brought from the ancestral domain of Raja Jai Singh. The name of the place where mines of marble were situated, is_____

Options :

1. ✖ Burhanpur

2. ✔ Makrana

3. ✖ Amber

4. ✖ Jaipur

Question Number : 22 Question Id : 97103630902 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

The popular name Taj Mahal was given by___

Options :

1. ✖ Shah Jahan

2. ✖ Muntaz Mahal

3. ✖ Jai Singh

4. ✔ Europeans

Question Number : 23 Question Id : 97103630903 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Point out the true statement from the following.

Options :

1. ✖ Marble was not used for construction of the Taj Mahal.

2. ✖ Red sand stone is non-visible in Taj Mahal complex.

3. ✔ The Taj Mahal is surrounded by a four-quartered garden known as Chahr Bagh

4. ✖ The Taj Mahal was constructed to celebrate the 'Urs ceremony for Mumtaz Mahal'

Question Number : 24 Question Id : 97103630904 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the contemporary texts, Taj Mahal is known_____

Options :

1. ✖ Mumtazabad

2. ✖ Mumtaz Mahal

3. ✖ Zainabad

4. ✔ Rauza-i-Munavvara

Question Number : 25 Question Id : 97103630905 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The document indicating the ownership of land, where Taj Mahal was built, is known as__

Options :

1. ✔ Farman

2. ✖ Sale deed

3. ✖ Sale-purchase deed

4. ✖ Gift deed

Is Section Default? : null

Question Number : 26 Question Id : 97103630906 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Telephone is an example of_____

Options :

1. ✔ Linear communication

2. ✖ Non-linear communication

3. ✖ Circular communication

4. ✖ Mechanized communication

Question Number : 27 Question Id : 97103630907 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The mode of communication that involves a single source transmitting information to a large number of receivers simultaneously, is called_____

Options :

1. ✖ Group communication

2. ✔ Mass communication

3. ✖ Interpersonal communication

4. ✖ Intrapersonal communication

Question Number : 28 Question Id : 97103630908 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In communication, the language is_____

Options :

1. ✖ The non-verbal code

2. ✔ The verbal code

3. ✖ The symbolic code

4. ✖ The iconic code

Question Number : 29 Question Id : 97103630909 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Chatting in internet is _____ type of communication

Options :

1. ✖ Parallel communication

2. ✖ Grapevine communication

3. ✔ Verbal communication

4. ✖ Non-verbal communication

Question Number : 30 Question Id : 97103630910 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which group of communicating aspects does not disrupt the communication process in the class?

Options :

1. ✖ Evaluating - focusing - exaggerating

2. ✔ Focusing – illustrating - exaggerating

3. ✖ Evaluating – focusing - illustrating

4. ✖ Reversing – Evaluating – focusing

Question Number : 31 Question Id : 97103630911 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following can be termed as verbal communication?

Options :

1. ✖ The child was crying to the attention of the mother

2. ✖ Signal at the cross-road changed from green to orange

3. ✔ Professor RAM delivered the lecture in the class room

4. ✖ Deepika wrote a letter for leave application

Question Number : 32 Question Id : 97103630912 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The first Indian satellite for serving the educational sector is_____

Options :

1.

✖ INSAT-B

2. ✔ EDUSAT

3. ✖ INSAT-C

4. ✖ SATEDU

Question Number : 33 Question Id : 97103630913 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In analog mass communication, stories are_____

Options :

1. ✔ Static

2. ✖ Dynamic

3. ✖ Interactive

4. ✖ Exploratory

Question Number : 34 Question Id : 97103630914 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a certain code MANISH is written as NZMRHS, then how will RANJITA be written in the same code?

Options :

1. ✖ IZMPRGZ

2. ✖ IZMQRIZ

3. ✔ IZMQRGZ

4. ✖ IZMQRHZ

Question Number : 35 Question Id : 97103630915 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

A is father of C and D is son of B. E is brother of A. If C is sister of D, how is B related to E?

Options :

1. ✖ Brother-in-law

2. ✔ Sister-in-law

3. ✖ Husband

4. ✖ Daughter

Question Number : 36 Question Id : 97103630916 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Complete the series Q1F, S2E, U6D, W21C, _____

Options :

1. ✖ Y66B

2. ✖ Y44B

3. ✔ Y88B

4. ✖ Z88B

Question Number : 37 Question Id : 97103630917 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If SHARP is coded as 58034 and PUSH is coded as 4658 then RUSH is coded as___

Options :

1. ✖ 3568

2. ✔ 3658

3. ✖ 3685

4. ✖ 3583

Question Number : 38 Question Id : 97103630918 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

RIDE : LNBE :: HELP : ?

Options :

1. ✖ NINP

2. ✖ BAJP

3. ✔ BJJP

4. ✖ JPCH

Question Number : 39 Question Id : 97103630919 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of the boys and girls in a school is 7:6. If 100 boys join in the school, the ratio would become 5:4 then the number of girls in the school is_____

Options :

1. ✖ 200

2. ✖ 800

3. ✔ 1200

4. ✖ 1600

Question Number : 40 Question Id : 97103630920 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 least number to be subtracted from 696 to be it a perfect square?

Options :

1. ✖ 1

2. ✖ 16

3. ✔ 20

4. ✖ 71

Question Number : 41 Question Id : 97103630921 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a trader sold two cars each at Rs.325475 and gains 12% on the first and losses 12% on the second, then his profit or loss percentage on the whole is_____

Options :

1. ✖ 14.4% profit

2. ✔ 1.44% loss

3. ✖ 14.4% loss

4. ✖ 0%

Question Number : 42 Question Id : 97103630922 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

At what rate of interest is an amount doubled in two years, when compounded annually?

Options :

1. ✖ 30 %

2. ✖ 45.2 %

3. ✔ 41.4 %

4. ✖ 73.2 %

Question Number : 43 Question Id : 97103630923 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 24 men can do a work in 35 days, how many men are required to complete the work in 21 days?

Options :

1. ✖ 38

2. ✖ 36

3. ✔ 40

4. ✖ 42

Question Number : 44 Question Id : 97103630924 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A train travels for 9 hours. It travelled the first half of the distance at 12 kmph and remaining distance at 15 kmph. Find the distance.

Options :

1. ✔ 120

2. ✖ 180

3. ✖ 920

4. ✖ 60

Question Number : 45 Question Id : 97103630925 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 groups of fractions is in descending order?

Options :

1. ✖ $\frac{8}{5}, \frac{9}{13}, \frac{6}{11}$

2. ✖ $\frac{8}{15}, \frac{6}{11}, \frac{9}{13}$

3. ✔ $\frac{9}{13}, \frac{6}{11}, \frac{8}{15}$

4. ✖ $\frac{6}{11}, \frac{8}{15}, \frac{9}{13}$

Question Number : 46 Question Id : 97103630926 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider the statements :

I. I watch TV only if I am bored
II. I am never bored when I have my brother's company
III. Whenever I go to the theatre I take my brother along.

Which one of the following conclusions is valid in the content of the above statements.

Options :

1. ✖ If I am bored, I watch TV

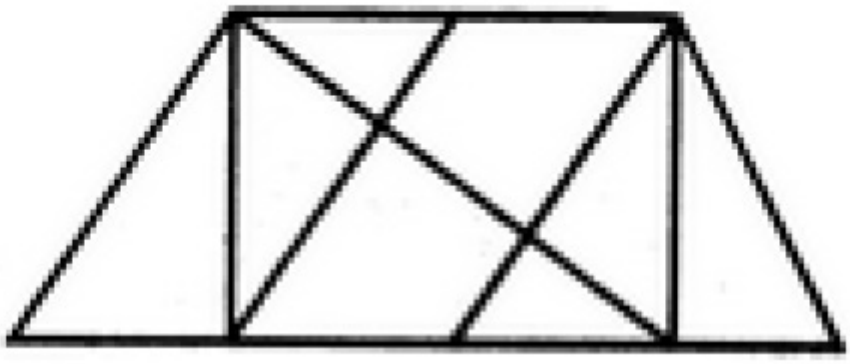
2. ✖ If I am bored, I seek my brother's company.

3. ✖ If I am not with my brother, then I watch TV

4. ✔ If I am not bored, I do not watch TV

Question Number : 47 Question Id : 97103630927 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the number of triangles in the given figure.



Options :

1. ✖ 8

2. ✖ 10

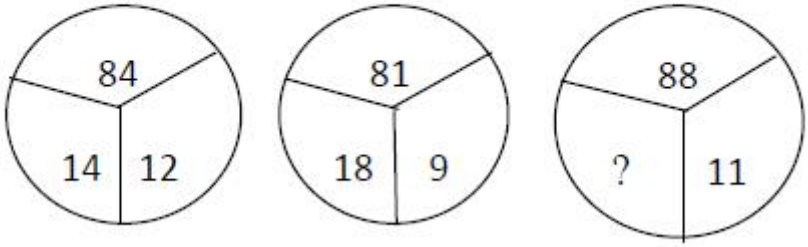
3. ✔ 14

4. ✖ 12

Question Number : 48 Question Id : 97103630928 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Select the missing number from the following.



Options :

1. ✖ 10

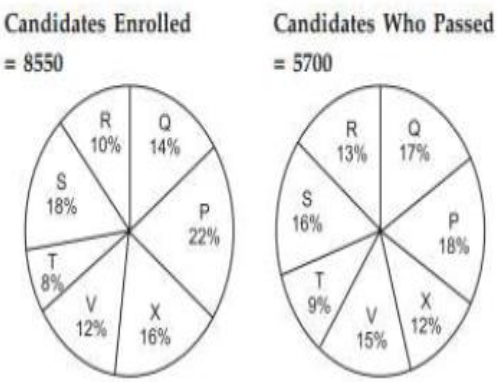
2. ✖ 12

3. ✖ 14

4. ✔ 16

Question Number : 49 Question Id : 97103630929 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 pie graphs carefully and answer the questions given below. Distribution of Candidates Enrolled For M.B.A. Entrance Examination And Those Who Passed In Different Institutes : P, Q, R, S, T, V and X.



What percentage of candidates passed the Exam from institute T out of the total number of candidates enrolled from the same institute?

Options :

1. ✖ 50%

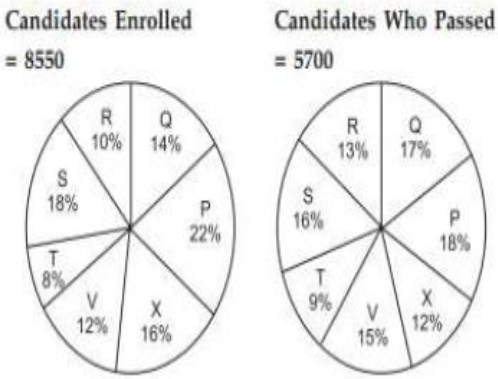
2. ✖ 62.5%

3. ✔ 75%

4. ✖ 80%

Question Number : 50 Question Id : 97103630930 Display Question Number : Yes Is Questi Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Study the following pie graphs carefully and answer the questions given below. Distribution of Candidates Enrolled For M.B.A. Entrance Examination And Those Who Passed In Different Institutes : P, Q, R, S, T, V and X.



What is the ratio of candidates passed to the candidates enrolled from institute P?

Options :

1. ✖ 9 : 11

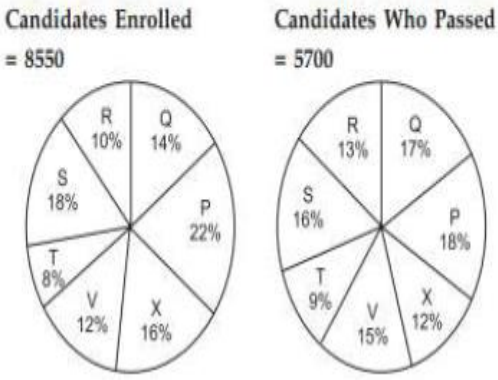
2. ✖ 14 : 17

3. ✔ 6 : 11

4. ✖ 9 : 17

Question Number : 51 Question Id : 97103630931 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 pie graphs carefully and answer the questions given below. Distribution of Candidates Enrolled For M.B.A. Entrance Examination And Those Who Passed In Different Institutes : P, Q, R, S, T, V and X.



What is the percentage of candidates passed to the candidates enrolled for institutes Q and R together?

Options :

1. ✖ 68%

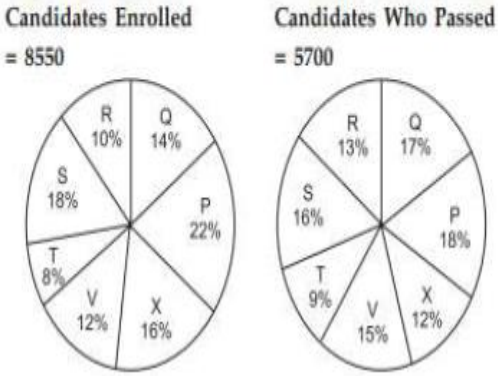
2. ✔ 83%

3. ✖ 74%

4. ✖ 65%

Question Number : 52 Question Id : 97103630932 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 pie graphs carefully and answer the questions given below. Distribution of Candidates Enrolled For M.B.A. Entrance Examination And Those Who Passed In Different Institutes : P, Q, R, S, T, V and X.



Which institute has the highest percentage of candidates passed to the candidates enrolled?

Options :

1. ✖ Q

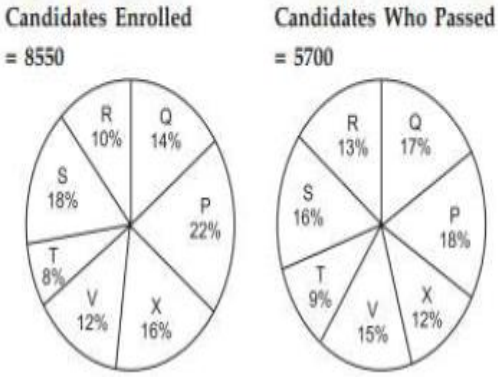
2. ✔ R

3. ✖ V

4. ✖ T

Question Number : 53 Question Id : 97103630933 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 pie graphs carefully and answer the questions given below. Distribution of Candidates Enrolled For M.B.A. Entrance Examination And Those Who Passed In Different Institutes : P, Q, R, S, T, V and X.



The number of candidates passed from institutes S and P together exceeds the number of candidates enrolled from institutes T and R together by

Options :

1. ✖ 228

2. ✖ 279

3. ✔ 399

4. ✖ 407

Question Number : 54 Question Id : 97103630934 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a network device?

Options :

1. ✔ CPU

2. ✖ Switch

3. ✖ Hub

4. ✖ Router

Question Number : 55 Question Id : 97103630935 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

A Gigabyte is equal to _____

Options :

1. ✖ 1024 bytes

2. ✖ 1024 kilobytes

3. ✔ 1024 megabytes

4. ✖ 1024 terabytes

Question Number : 56 Question Id : 97103630936 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A computer program that translates a program statement by statement into machine language is called_____

Options :

1. ✖ A compiler

2. ✔ An interpreter

3. ✖ A translator

4. ✖ A simulation

Question Number : 57 Question Id : 97103630937 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is correct for $(17)_{10}$.

Options :

1. ✖ $(10011)_2$

2. ✖ $(10111)_2$

3. ✔ $(10001)_2$

4. ✖ $(11001)_2$

Question Number : 58 Question Id : 97103630938 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 protocol supports to link from one webpage to another page?

Options :

1. ✖ HTML

2. ✖ IP

3. ✖ FTP

4. ✔ HTTP

Question Number : 59 Question Id : 97103630939 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the biggest news agency in India?

Options :

1. ✖ UNI

2. ✔ PTI

3. ✖ NAAP

4. ✖ Samachar Bharathi

Question Number : 60 Question Id : 97103630940 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The purpose of ICT use in education is to_____

Options :

1. ✖ Make teaching interesting

2. ✖ Attract students

3. ✔ Optimize learning process

4. ✖ Promote technology in teaching

Question Number : 61 Question Id : 97103630941 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 mobile payment application is developed by the National Payments Corporation of India based on UPI?

Options :

1. ✖ MYGOV

2. ✔ BHIM

3. ✖ UMANG

4. ✖ Phone pay

Question Number : 62 Question Id : 97103630942 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Assertion(A): Night time temperature in the central parts of a city are generally higher than those over the surrounding rural areas.

Reason(R): Radiation losses over the urban areas are less than that over the rural areas.

Choose the correct answer from the options given below.

Options :

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

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

3. ✖ (A) true, but (R) is false.

4. ✖ (A) is false, but (R) is true

Question Number : 63 Question Id : 97103630943 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 activity contributes more to water pollution than any other throughout world?

Options :

1. ✖ Industry

2. ✖ Hydroelectric power generation

3. ✖ Urbanization

4. ✔ Agriculture

Question Number : 64 Question Id : 97103630944 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a water-borne disease?

Options :

1. ✖ Cholera

2. ✖ Hepatitis

3. ✖ Typhoid

4. ✔ Dengue

Question Number : 65 Question Id : 97103630945 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a renewable natural resource?

Options :

1. ✖ Fresh water

2. ✖ Clean water

3. ✔ Salt

4. ✖ Fertile soil

Question Number : 66 Question Id : 97103630946 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The chemical formula for Baking soda is_____

Options :

1. ✖ NH_4Cl

2. ✔ $NaHCO_3$

3. ✖ $Na_2CO_3H_2O$

4. ✖ CH_3COOH

Question Number : 67 Question Id : 97103630947 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which was the Cultural Capital of Andhra Pradesh?

Options :

1. ✖ Tirupati

2. ✖ Visakhapatnam

3. ✔ Rajamahendravaram

4. ✖ Amaravathi

Question Number : 68 Question Id : 97103630948 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Koundinya wildlife sanctuary is located in which of the following states?

Options :

1. ✔ Andhra Pradesh

2. ✖ Kerala

3. ✖ Tamil Nadu

4. ✖ Karnataka

Question Number : 69 Question Id : 97103630949 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

National council for women education was established in_____

Options :

1. ✔ 1958

2. ✖ 1976

3. ✖ 1989

4. ✖ 1965

Question Number : 70 Question Id : 97103630950 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Autonomy in higher education system implies freedom in_____

Options :

1. ✖ Administration

2. ✔ Curriculum development

3. ✖ Finance

4. ✖ Policy-making

MATERIAL SCIENCE AND NANOTECHNOLOGY

Section Id :	971036440
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 : 97103630951 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hamiltonian operator for simple harmonic oscillator is H = _____

Options :

1. ✔ $\frac{p^2}{2m} + \frac{1}{2}kx^2$

2. ✖

$\frac{p^2}{2m}$

3. ✖ $\frac{1}{2}kx^2$

4. ✖ $\frac{p^2}{2m} + \mathrm{kx}$

Question Number : 72 Question Id : 97103630952 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Angular momentum is defined as L=

Options :

1. ✖ $\vec{r}.\vec{p}$

2. ✔ $\vec{r} \times \vec{p}$

3. ✖ $\mathrm{M} \times \mathrm{V}$

4. ✖ $\vec{r} \times \vec{p}^2$

Question Number : 73 Question Id : 97103630953 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Schrodinger's equation describes the

Options :

1. ✖ Procedure for splitting an atom

2. ✖ Complement of the wave equation

3. ✔ Behaviour of "matter waves"

4. ✖ Motion of light

Question Number : 74 Question Id : 97103630954 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a quantum wave-particle, E = _____

Options :

1. ✖ ħk

2. ✖ ħk/2

3. ✖ ħω/2

4. ✔ ħω

Question Number : 75 Question Id : 97103630955 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The energy of a particle in an infinite potential box is _____

Options :

1. ✖ Proportional to length of box

2. ✔ Inversely proportional to square of length of box

3. ✖ Inversely proportional to length of box

4. ✖ Proportional to square of length of box

Question Number : 76 Question Id : 97103630956 Display Question Number : Yes Is Questi

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

The Pauli Exclusion Principle states that

Options :

1. ✔ No two electrons can have the same quantum numbers

2. ✖ No two particles can have the same quantum numbers

3. ✖ No two particles can have the same spin

4. ✖ No two particles can have the same energy

Question Number : 77 Question Id : 97103630957 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ law of thermodynamics is used to understand the concept of energy conservation.

Options :

1. ✖ Zeroth law

2. ✔ First law

3. ✖ Second law

4. ✖ Conservation of Energy law

Question Number : 78 Question Id : 97103630958 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Entropy is a _____

Options :

1. ✖ Path function, intensive property

2. ✖ Path function, extensive property

3. ✖ Point function, intensive property

4. ✔ Point function, extensive property

Question Number : 79 Question Id : 97103630959 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The enthalpy of a substance is defined as

Options :

1. ✖ $H \neq U+PV$

2. ✔ $H = U+PV$

3. ✖ $H = -U+PV$

4. ✖ $H = -U-PV$

Question Number : 80 Question Id : 97103630960 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which law of thermodynamics states that heat flow transfer is from a body at a higher temperature to one at lower temperature

Options :

1. ✖ Third law of thermodynamics

2. ✖ First law of thermodynamics

3. ✔ Second law of thermodynamics

4. ✖ Law of Energy Conservation

Question Number : 81 Question Id : 97103630961 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In statistical equilibrium, the thermodynamic probability of a system is

Options :

1. ✖ 1

2. ✖ Zero

3. ✖ Minimum but not 1

4. ✔ Maximum

Question Number : 82 Question Id : 97103630962 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Maxwell-Boltzmann distribution law is applicable for

Options :

1. ✔ Classical particles

2. ✖ Particles with integral spin

3. ✖ Particles with half integral spin

4. ✖ Quantum particles

Question Number : 83 Question Id : 97103630963 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Phase space is _____ dimensional

Options :

1. ✖ 1

2. ✔ 6

3. ✖ 5

4. ✖ 12

Question Number : 84 Question Id : 97103630964 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the hardest naturally occurring carbon material?

Options :

1. ✔ Diamond

2. ✖ Elemental carbon

3. ✖ Carbon nanotube

4. ✖ Graphitic carbon nitride

Question Number : 85 Question Id : 97103630965 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Among the following carbon allotropes, the one with ONE dimensional nanostructure is

Options :

1. ✖ Diamond

2. ✖ Graphite

3. ✖ Graphene

4. ✔ Carbon nanotubes

Question Number : 86 Question Id : 97103630966 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The smallest Buckyball Cluster of carbon is

Options :

1. ✖ Graphene sheets

2. ✖ Reduced Graphene Oxide

3. ✔ Fullerene

4. ✖ Carbon nanohorn

Question Number : 87 Question Id : 97103630967 Display Question Number : Yes Is Questi

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

The weaker bond is the following bond

Options :

1. ✔ Van der Waals bond

2. ✖ Covalent bond

3. ✖ Metallic bond

4. ✖ Ionic bond

Question Number : 88 Question Id : 97103630968 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

"Electron Sea" exists in _____

Options :

1. ✖ Ionic bonds

2. ✖ Covalent bonds

3. ✖ Polar bonds

4. ✔ Metallic bonds

Question Number : 89 Question Id : 97103630969 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Opaque and Lustrous materials belong to

Options :

1. ✖ Glass

2. ✔ Metals

3. ✖ Plastic

4. ✖ Wood

Question Number : 90 Question Id : 97103630970 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When *one* s and *two* p orbitals of the same shell of an atom mix to form 3 equivalent orbitals. The new orbitals formed are called

Options :

1. ✖ sp^3

2. ✖ sp^1

3. ✔ sp^2

4. ✖ sp^4

Question Number : 91 Question Id : 97103630971 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a crystal, if a fault exists in the arrangement at a point, it is called

Options :

1. ✔ Point defect

2. ✖ Line defect

3. ✖ Volume defect

4. ✖ Surface defect

Question Number : 92 Question Id : 97103630972 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 term for crystal defect caused by the absence of an atom from its regular position in the crystal lattice?

Options :

1. ✖ Interstial

2. ✔ Vacancy

3. ✖ Line

4. ✖ Surface

Question Number : 93 Question Id : 97103630973 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 term used to refer to the repeatable unit in the crystal?

Options :

1. ✔ Unit cell

2. ✖ Lattice

3. ✖ Miller indices

4. ✖ Crystal

Question Number : 94 Question Id : 97103630974 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The interracial angles of a hexagonal crystal system are given by _____

Options :

1. ✖ $\alpha = \beta = \Upsilon = 90^\circ$

2. ✔ $\alpha = \beta = 90^\circ; \Upsilon = 120^\circ$

3. ✖ $\alpha = \beta = \Upsilon \neq 90^\circ$

4. ✖ $\alpha \neq \beta \neq \Upsilon \neq 90^\circ$

Question Number : 95 Question Id : 97103630975 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The magnetization in the material can be changed by applying _____

Options :

1. ✖ Electric field

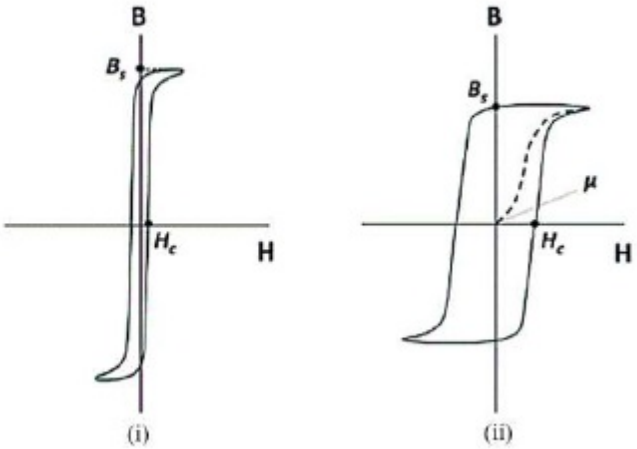
2. ✖ Resistance

3. ✔ Magnetic field

4. ✖ Magnetic moment

Question Number : 96 Question Id : 97103630976 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the type of magnetic behaviour from given hysteresis loop



Options :

1. ✖ (i) Hard magnet (ii) Soft magnet

2. ✖ (i) Paramagnetic (ii) Diamagnetic

3. ✔ (i) Soft magnet (ii) Hard magnet

4. ✖ (i) Diamagnetic (ii) Paramagnetic

Question Number : 97 Question Id : 97103630977 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Magnetic Susceptibility equation _____

Options :

1. ✔ $\chi = M/H$

2. ✖ $\chi = m_o/M+H$

3. ✖ $\chi = \mu_o/H$

4. ✖ $\chi = H/M$

Question Number : 98 Question Id : 97103630978 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 has maximum relative permeability?

Options :

1.

✖ Superparamagnetic

2. ✖ Diamagnetic

3. ✖ Paramagnetic

4. ✔ Ferromagnetic

Question Number : 99 Question Id : 97103630979 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When does a ferromagnetic material become paramagnetic material?

Options :

1. ✖ At absolute Zero temperature

2. ✔ At Curie temperature

3. ✖ Below Curie temperature

4. ✖ At room temperature

Question Number : 100 Question Id : 97103630980 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The magnetic lines of force cannot penetrate the body of a superconductor, is a phenomenon known as

Options :

1. ✖ Isotopic effect

2. ✖ BCS theory

3. ✔ Meissner effect

4. ✖ London theory

Question Number : 101 Question Id : 97103630981 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

Who delivered the famous speech titled "There is plenty of room at the bottom"

Options :

1. ✔ Richard Feynman

2. ✖ Maxwell

3. ✖ Stephen Hawking

4. ✖ Albert Einstein

Question Number : 102 Question Id : 97103630982 Display Question Number : Yes Is Question

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

A quantum dot is a nanomaterial of dimension

Options :

1. ✖ Four

2. ✖ One

3. ✔ Zero

4. ✖ Two

Question Number : 103 Question Id : 97103630983 Display Question Number : Yes Is Quest

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

The size of atoms is nearly _____

Options :

1. ✖ 0.1 μm

2. ✔ 0.1 nm

3. ✖ 11 nm

4. ✖ 100 nm

Question Number : 104 Question Id : 97103630984 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The creation of nanoscale materials by chemically or physically breaking down the larger materials is known as the _____ approach in nanotechnology.

Options :

1. ✔ Top-down

2. ✖ Bottom-up

3. ✖ Intermediate

4. ✖ Soft-chemical

Question Number : 105 Question Id : 97103630985 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Synthesis of nanomaterial by Colloidal precipitation is influenced by _____

Options :

1. ✖ Temperature, Pressure and Reaction time

2. ✖ Catalyst type, Solvent Polarity and Agitation Speed

3. ✖ Surface area, Volume and Particle Size

4. ✔ Concentration of Reactants, pH Value and Temperature

Question Number : 106 Question Id : 97103630986 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

CVD stands for

Options :

1. ✖ Carbon vapour density

2. ✖ Chemical vapour density

3. ✔ Chemical vapour deposition

4. ✖ Carbon vapour deposition

Question Number : 107 Question Id : 97103630987 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Nanoscience can be studied with the help of _____

Options :

1. ✖ Newtonian mechanics

2. ✔ Quantum mechanics

3. ✖ Macro dynamics

4. ✖ Chemical physics

Question Number : 108 Question Id : 97103630988 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

____ method utilizes stainless steel autoclave for synthesis of nanomaterial

Options :

1. ✔ Hydrothermal

2. ✖ Sol-gel

3. ✖ Ball milling

4. ✖ Photo-deposition

Question Number : 109 Question Id : 97103630989 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A nanometer is _____

Options :

1. ✖ 10^{-12} m

2. ✖ 10^{-3} m

3. ✖ 10^{-6} m

4. ✔ 10^{-9} m

Question Number : 110 Question Id : 97103630990 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Nanowires can be classified as _____

Options :

1. ✔ 1-D Nanomaterial

2. ✖ 2-D Nanomaterial

3. ✖ 3-D Nanomaterial

4. ✖ 0-D Nanomaterial

Question Number : 111 Question Id : 97103630991 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ molecule in nanoscale dimensions capture sunlight during plant photosynthesis

Options :

1. ✖ Organic

2. ✖ Carbon dioxide

3. ✔ Thylakoids

4. ✖ Water

Question Number : 112 Question Id : 97103630992 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many types of vapor-phase deposition techniques are present?

Options :

1. ✖ One

2. ✔ Two

3. ✖ Three

4. ✖ Four

Question Number : 113 Question Id : 97103630993 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What happens to the colour of gold nanoparticles when their size decreases

Options :

1. ✖ The colour remains the same

2. ✖ The colour shifts from blue to red

3. ✖ The colour shifts from yellow to blue

4. ✔ The colour shifts from red to blue

Question Number : 114 Question Id : 97103630994 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What ratio decides the efficacy of nanomaterials?

Options :

1. ✖ Weight/Volume

2. ✔ Surface/Volume

3. ✖ Volume/Weight

4. ✖ Pressure/Volume

Question Number : 115 Question Id : 97103630995 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Nanocrystalline materials synthesized by sol-gel technique results in a foam-like structures are called _____

Options :

1. ✖ Gel

2. ✖ Aerosol

3. ✖ Plasma

4. ✔ Aerogel

Question Number : 116 Question Id : 97103630996 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Brags' law relates

Options :

1. ✔ Wavelength of X-rays to diffraction angle.

2. ✖ Intensity of diffracted beam to crystal size.

3. ✖ Lattice spacing to unit cell parameters.

4. ✖ X-ray source to detector distance.

Question Number : 117 Question Id : 97103630997 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 true in intensity of K_α, K_β and K_γ spectral lines?

Options :

1. ✔ $K_\alpha > K_\beta > K_\gamma$

2. ✖ $K_\alpha < K_\beta < K_\gamma$

3. ✖ $K_\beta > K_\alpha < K_\gamma$

4. ✖ $K_\alpha = K_\beta = K_\gamma$

Question Number : 118 Question Id : 97103630998 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Miller indices (*hkl*) represent

Options :

1. ✖ The diffraction angle of a peak in XRD

2. ✖ The spacing between crystal planes in a lattice

3. ✖ The intensity of diffraction peaks in XRD

4. ✔ The crystallographic orientations of crystal planes

Question Number : 119 Question Id : 97103630999 Display Question Number : Yes Is Question

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

The Laue pattern shows

Options :

1. ✖ Sharp peaks corresponding to specific lattice planes.

2. ✔ Continuous rings representing all diffracted directions.

3. ✖ A diffuse background indicative of amorphous material.

4. ✖ Broad peaks corresponding to specific lattice planes.

Question Number : 120 Question Id : 97103631000 Display Question Number : Yes Is Quest

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

What is the range of Visible region in the electromagnetic spectrum?

Options :

1. ✔ 400 - 800 nm

2. ✖ 190 - 250 nm

3. ✖ 1100 - 1500 nm

4. ✖ 100 - 400 nm

Question Number : 121 Question Id : 97103631001 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 light source used in visible and infra-red spectrophotometer?

Options :

1. ✖ LASER

2. ✖ Tube light

3. ✖ LED

4. ✔ Tungsten lamp

Question Number : 122 Question Id : 97103631002 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Basic Principle of IR spectra is

Options :

1. ✔ Molecular vibrations

2. ✖ d-d transition

3. ✖ L→M transition

4. ✖ Vibrational frequency

Question Number : 123 Question Id : 97103631003 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 energy is associated with the molecule

i. Translational Energy
ii. Rotational Energy
iii. Vibrational Energy

Options :

1. ✖ (i) only

2. ✖ (ii) and (iii) only

3. ✔ (i), (ii), and (iii)

4. ✖ (i) and (iii) only

Question Number : 124 Question Id : 97103631004 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Reciprocal of which is called the wavenumber?

Options :

1. ✖ Frequency

2. ✔ Wavelength

3. ✖ Velocity

4. ✖ Density

Question Number : 125 Question Id : 97103631005 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Absorbance (A) is related to transmittance (T) by the equation

Options :

1. ✔ $A = \log_{10}\left(\frac{I}{T}\right)$

2. ✖ $A = \log_{10} T$

3. ✖ $A = \log_{10} T^2$

4. ✖ $A = \log_{10} T^3$

Question Number : 126 Question Id : 97103631006 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which Law governs the dispersion of light by a grating

Options :

1. ✖ Snell's Law

2. ✔ Bragg's Law

3. ✖ Ohm's Law

4. ✖ Malus Law

Question Number : 127 Question Id : 97103631007 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The region of IR spectrum between (1400-600) cm^{-1} corresponds to _____

Options :

1. ✖ Functional group region

2. ✖ Low frequency region

3. ✔ Fingerprint region

4. ✖ High frequency region

Question Number : 128 Question Id : 97103631008 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For IR analysis of nano powders, the material used to prepare pellets is _____

Options :

1. ✔ Potassium bromide

2. ✖ Trichloromethyl silane

3. ✖ Sodium chloride

4. ✖ Calcium Phosphate

Question Number : 129 Question Id : 97103631009 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruct Time : 0

Which of the following is not a type of bending in molecular vibrations?

Options :

1. ✖ Twisting

2. ✔ Stretching

3. ✖ Wagging

4. ✖ Rocking

Question Number : 130 Question Id : 97103631010 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 bonds will show an absorption band at the highest wavenumber?

Options :

1. ✔ O–H

2. ✖ C=O

3. ✖ C=C

4. ✖ C–H

Question Number : 131 Question Id : 97103631011 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the vibrational spectrum of CO_2, the number of fundamental vibrational modes common in both infrared and Raman are

Options :

1. ✖ Two

2. ✖ Three

3. ✔ Zero

4. ✖ One

Question Number : 132 Question Id : 97103631012 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Raman shift depends upon

Options :

1. ✔ Incident wavelength

2. ✖ Incident intensity

3. ✖ Resolving power of spectrograph used

4. ✖ Molecular energy levels of scatter

Question Number : 133 Question Id : 97103631013 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Signal splitting in NMR rises from

Options :

1. ✖ Shielding effect

2. ✖ Spin-Spin decoupling

3. ✖ Deshielding effect

4. ✔ Spin-Spin coupling

Question Number : 134 Question Id : 97103631014 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

SEM stands for

Options :

1. ✖ Secondary Elemental Microscopy

2. ✖ Scanning Tunnelling Microscopy

3. ✔ Scanning Electron Microscopy

4. ✖ Source Elemental Microscopy

Question Number : 135 Question Id : 97103631015 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

AFM characterization is used to study

Options :

1. ✖ Bond angle

2. ✔ Morphology

3. ✖ Nature of bonding

4. ✖ Bond strength

Question Number : 136 Question Id : 97103631016 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which type of information can XRD provide about a material's crystal structure

Options :

1. ✖ Molecular weight

2. ✖ Electron configuration

3. ✖ Bond length

4. ✔ Atomic arrangement

Question Number : 137 Question Id : 97103631017 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The term XRD refers to

Options :

1. ✖ X Resolution Depository

2. ✖ X Random Depository

3. ✔ X Ray Diffraction

4. ✖ X Random Diffraction

Question Number : 138 Question Id : 97103631018 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

X-Ray diffraction is based on

Options :

1. ✖ Boltzmann equation

2. ✖ Bose equation

3. ✔ Bragg's equation

4. ✖ Beer Lambert law equation

Question Number : 139 Question Id : 97103631019 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The X-axis of the plot drawn for X-ray Diffraction is

Options :

1. ✖ Distance

2. ✔ Angle

3. ✖ Time

4. ✖ Wavelength

Question Number : 140 Question Id : 97103631020 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

_____ is an example of two-dimensional nanomaterial

Options :

1. ✔ Nanosheet

2. ✖ Nanorod

3. ✖ Nanotube

4. ✖ Nanoflower

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