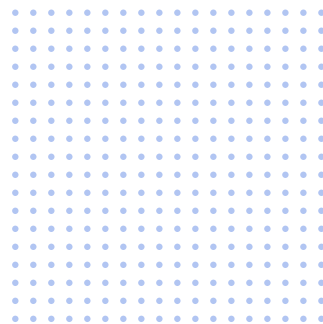




FOR JNU EE EXAM PREPARATION

JNU EE 2022 Question Paper · Ph.D Nanoscience

EXAM

JNU EE

YEAR

2022

TYPE

Question Paper

SUBJECT

Ph.D Nanoscience



Test Date : 09 Dec 2022

Test Slot : Slot 2

Subject : NNSH-Nanoscience

Sl. No.1

QBID:9082001

Which of the following does not correspond to the characteristics of research?

1. Research is systematic
2. Research is not a process
3. Research is undertaken to intensify expertise
4. Research is organised process of data collection

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16601]

2[Option ID=16602]

3[Option ID=16603]

4[Option ID=16604]

Sl. No.2

QBID:9082002

What does the longitudinal research approach actually deal with?

1. Long-term research
2. Short-term research
3. Horizontal research
4. Lateral research

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16605]

2[Option ID=16606]

3[Option ID=16607]

4[Option ID=16608]

Sl. No.3

QBID:9082003

Concepts are _____ of research.

1. Guide
2. Tools
3. Methods
4. Variables

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16609]

2[Option ID=16610]

3[Option ID=16611]

4[Option ID=16612]

Sl. No.4

QBID:9082004

In order to pursue research, which one of the following is mandatorily the primary step?

1. Formulating a research question
2. Developing a research design
3. Formulating a research hypothesis
4. Deciding upon data analysis procedures

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16613]

2[Option ID=16614]

3[Option ID=16615]

4[Option ID=16616]

Sl. No.5

QBID:9082005

The main aim of the scientific method in the research field is to

1. Improve data interpretation
2. Confirm triangulation
3. Introduce new variables
4. Eliminate spurious relations

- (1) 1
(2) 2
(3) 3
(4) 4

- 1[Option ID=16617]
 2[Option ID=16618]
 3[Option ID=16619]
 4[Option ID=16620]

Sl. No.6
QBID:9082006

The process not required in experimental research is

1. Controlling
2. Observation
3. Validation
4. Replication

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16621]
 2[Option ID=16622]
 3[Option ID=16623]
 4[Option ID=16624]

Sl. No.7
QBID:9082007

A researcher is interested in studying the prospects of a particular nano-based product in an urban area. So, what tool should he prefer for the study?

1. Rating Scale
2. Interview
3. Questionnaire
4. Schedule

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16625]
 2[Option ID=16626]
 3[Option ID=16627]
 4[Option ID=16628]

Sl. No.8
QBID:9082008

The first page of research report is

1. Appendix
2. Bibliography
3. Index
4. Title page

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16629]

2[Option ID=16630]

3[Option ID=16631]

4[Option ID=16632]

Sl. No.9

QBID:9082009

Which of the following is the main reason for producing the atmospheric greenhouse effect?

1. Absorption and re-emission of ultraviolet radiations by the atmosphere
2. Absorption and re-emission of infrared radiations by the atmosphere
3. Absorption and re-emission of visible light by the atmosphere
4. None of the above

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16633]

2[Option ID=16634]

3[Option ID=16635]

4[Option ID=16636]

Sl. No.10

QBID:9082010

Which of the following diseases are related to coronavirus?

1. MERS only
2. SARS only
3. Both 1 and 2
4. Neither 1 nor 2

(1) 1

(2) 2

(3) 3

(4) 4

- 1[Option ID=16637]
 2[Option ID=16638]
 3[Option ID=16639]
 4[Option ID=16640]

Sl. No.11
 QBID:9082011

Which of the following gas destroys the chlorophyll present in the plant leaves?

1. SO_3
2. N_2O
3. SO_2
4. CO_2

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16641]
 2[Option ID=16642]
 3[Option ID=16643]
 4[Option ID=16644]

Sl. No.12
 QBID:9082012

Which of the following state in India is called the "Tiger state"?

1. Andhra Pradesh
2. Madhya Pradesh
3. Assam
4. Gujarat

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16645]
 2[Option ID=16646]
 3[Option ID=16647]
 4[Option ID=16648]

Sl. No.13
 QBID:9082013

The instrument used to measure the blood pressure is

1. Sphygmomanometer
2. Barometer
3. Photometer
4. Thermometer

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16649]
2[Option ID=16650]
3[Option ID=16651]
4[Option ID=16652]

Sl. No.14
QBID:9082014

In MS Excel, which one denotes a range B1 through E5?

1. B1 – E5
2. B1:E5
3. B1 to E5
4. B1\$E5

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16653]
2[Option ID=16654]
3[Option ID=16655]
4[Option ID=16656]

Sl. No.15
QBID:9082015

Anova is

1. The name of a statistical software package
2. A one-way analysis of variance
3. A two way-analysis of variance
4. A government body which collects social statistics.

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16657]
2[Option ID=16658]
3[Option ID=16659]
4[Option ID=16660]

Sl. No.16
QBID:9082016

Cluster sampling, stratified sampling and systematic sampling are types of which sampling method?

1. Direct sampling
2. Indirect sampling
3. Random sampling
4. Non-random sampling

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16661]

2[Option ID=16662]

3[Option ID=16663]

4[Option ID=16664]

Sl. No.17

QBID:9082017

What does a good thesis involve?

- A. Reducing punctuations as well as grammatical errors to minimalist
- B. Correct reference citation
- C. Consistency in the way of thesis writing
- D. Well defined abstract

Select the answers from the codes given below:

1. B, C and D only
2. A, B, C and D
3. A, B and C only
4. A, B and D only

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16665]

2[Option ID=16666]

3[Option ID=16667]

4[Option ID=16668]

Sl. No.18

QBID:9082018

What is the correct sequence of the core elements of the process of research?

1. Introduction; Conclusions; Data Collection; Data Analysis and Recommendations
2. Executive Summary; Bibliography; Literature Review; Data Collection; Conclusions
3. Research Plan; Research Data; References; Analysis
4. Introduction; Literature Review; Research Methodology; Results; Discussion and Conclusions

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16669]

2[Option ID=16670]

3[Option ID=16671]

4[Option ID=16672]

Sl. No.19

QBID:9082019

The first purpose of a survey is to

1. Description
2. Evaluation
3. Selection
4. Provide Information

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16673]

2[Option ID=16674]

3[Option ID=16675]

4[Option ID=16676]

Sl. No.20

QBID:9082020

Which one of the following is an indication of the quality of a research journal?

1. h-index
2. Impact factor
3. G-index
4. i10-index

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16677]

2[Option ID=16678]

3[Option ID=16679]

4[Option ID=16680]

Sl. No.21

QBID:9082021

Which of the following has the highest neutron ratio?

1. ${}_8\text{O}^{16}$ 2. ${}_2\text{He}^4$ 3. ${}_{26}\text{Fe}^{56}$ 4. ${}_{92}\text{U}^{235}$

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16681]

2[Option ID=16682]

3[Option ID=16683]

4[Option ID=16684]

Sl. No.22

QBID:9082022

Which energy state of molecules is affected by microwave radiation?

1. Nuclear

2. Vibrational

3. Electronic

4. Rotational

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16685]

2[Option ID=16686]

3[Option ID=16687]

4[Option ID=16688]

Sl. No.23

QBID:9082023

Which of the following is a measure of consistency of data?

1. Mean
2. Standard deviation
3. Mode
4. Median

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16689]

2[Option ID=16690]

3[Option ID=16691]

4[Option ID=16692]

Sl. No.24

QBID:9082024

The region of electromagnetic spectrum for nuclear magnetic resonance is

1. Microwave
2. Radio frequency
3. Infrared
4. UV-rays

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16693]

2[Option ID=16694]

3[Option ID=16695]

4[Option ID=16696]

Sl. No.25

QBID:9082025

One nm is equal to

1. 10^{-6} m
2. 10^{-8} m
3. 10^{-9} m
4. 10^{-5} m

(1) 1

(2) 2

(3) 3

(4) 4

- 1[Option ID=16697]
 2[Option ID=16698]
 3[Option ID=16699]
 4[Option ID=16700]

Sl. No.26
 QBID:9082026

Beer's law states that the intensity of light decreases with respect to

1. Concentration
2. Distance
3. Composition
4. Volume

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16701]
 2[Option ID=16702]
 3[Option ID=16703]
 4[Option ID=16704]

Sl. No.27
 QBID:9082027

Which of the following is the relation between hydrogen ion and hydroxyl ion concentration of pure water?

1. Value of hydrogen ion concentration is greater
2. Value of hydroxyl ion concentration is greater
3. Both are always the same
4. The concentrations keep changing

- (1) 1
 (2) 2
 (3) 3
 (4) 4

- 1[Option ID=16705]
 2[Option ID=16706]
 3[Option ID=16707]
 4[Option ID=16708]

Sl. No.28
 QBID:9082028

Full form of URL is?

1. Uniform Resource Locator
2. Uniform Resource Link
3. Uniform Registered Link
4. Uniform Resource Language

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16709]

2[Option ID=16710]

3[Option ID=16711]

4[Option ID=16712]

Sl. No.29

QBID:9082029

HTML stands for

1. Hyper Text Markup Language
2. Hyper Text Manipulation Language
3. Hyper Text Managing Links
4. Hyper Text Manipulating Links

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16713]

2[Option ID=16714]

3[Option ID=16715]

4[Option ID=16716]

Sl. No.30

QBID:9082030

Electron microscope can give a magnification up to

1. 400,000X
2. 100,000X
3. 15,000X
4. 100X

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16717]
 2[Option ID=16718]
 3[Option ID=16719]
 4[Option ID=16720]

Sl. No.31
 QBID:9082031

What is a red shift?

1. the shift of absorption to undergo increase in wavelength and decrease in energy
2. the shift of absorption to undergo decrease in wavelength and increase in energy
3. the shifting of absorption towards the blue end of the spectrum
4. none of these

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16721]
 2[Option ID=16722]
 3[Option ID=16723]
 4[Option ID=16724]

Sl. No.32
 QBID:9082032

Intellectual Property Rights (IPR) protect the use of information and ideas that are of

1. Ethical value
2. Moral value
3. Social value
4. Commercial value

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16725]
 2[Option ID=16726]
 3[Option ID=16727]
 4[Option ID=16728]

Sl. No.33
 QBID:9082033

Newton gave three basic laws of motion. This research is categorized as

1. Descriptive Research
2. Sample Survey
3. Fundamental Research
4. Applied Research

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16729]

2[Option ID=16730]

3[Option ID=16731]

4[Option ID=16732]

Sl. No.34

QBID:9082034

What is the wavelength range of the UV spectrum?

1. 100 nm to 500 nm
2. 200 nm to 800 nm
3. 300 nm to 1000 nm
4. 400 nm to 1600 nm

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16733]

2[Option ID=16734]

3[Option ID=16735]

4[Option ID=16736]

Sl. No.35

QBID:9082035

Conferences are meant for

1. multiple target groups only
2. group discussions only
3. show-casing new research only
4. all of these

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16737]
 2[Option ID=16738]
 3[Option ID=16739]
 4[Option ID=16740]

Sl. No.36
 QBID:9082036

From where coronavirus got its name?

1. Due to their crown-like projections
2. Due to their leaf-like projections
3. Due to their surface structure of bricks
4. Due to icosahedral structure

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16741]
 2[Option ID=16742]
 3[Option ID=16743]
 4[Option ID=16744]

Sl. No.37
 QBID:9082037

Why research aptitude test is required for candidates appearing for PhD entrance?

1. to understand the difficulty level of the test
2. to teach the candidates about the basic idea of research methodology
3. to develop a scientific approach in the aspiring candidates
4. to identify and screen candidates with scientific approach

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16745]
 2[Option ID=16746]
 3[Option ID=16747]
 4[Option ID=16748]

Sl. No.38
 QBID:9082038

Use of vaccines and immunization programmes have controlled which of the following diseases?

1. Polio and Tetanus only
2. Diphtheria and Pneumonia only
3. AIDS and Cancer only
4. Both 1 and 2 only

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16749]

2[Option ID=16750]

3[Option ID=16751]

4[Option ID=16752]

Sl. No.39

QBID:9082039

Which of the following microscope focusses electrons that are transmitted through thinly sliced specimens of non-living samples

1. Compound Light Microscope
2. Dissecting Microscope
3. Scanning Electron Microscope (SEM)
4. Transmission Electron Microscope (TEM)

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16753]

2[Option ID=16754]

3[Option ID=16755]

4[Option ID=16756]

Sl. No.40

QBID:9082040

The electrons in Scanning Electron Microscope (SEM) are reflected through

1. Glass funnel
2. Specimen
3. Metal coated surfaces
4. Vacuum chamber

(1) 1

(2) 2

(3) 3

(4) 4

- 1[Option ID=16757]
 2[Option ID=16758]
 3[Option ID=16759]
 4[Option ID=16760]

Sl. No.41

QBID:9082041

NMR spectrometer provides _____ and _____ method of determining structure in soluble chemical compounds.

1. Accurate, destructive
2. Accurate, non-destructive
3. Inaccurate, destructive
4. Inaccurate, non-destructive

(1) 1

(2) 2

(3) 3

(4) 4

- 1[Option ID=16761]
 2[Option ID=16762]
 3[Option ID=16763]
 4[Option ID=16764]

Sl. No.42

QBID:9082042

In which of the following ways, absorption is related to transmittance?

1. Absorption is the logarithm of transmittance
2. Absorption is the reciprocal of transmittance
3. Absorption is the negative logarithm of transmittance
4. Absorption is a multiple of transmittance

(1) 1

(2) 2

(3) 3

(4) 4

- 1[Option ID=16765]
 2[Option ID=16766]
 3[Option ID=16767]
 4[Option ID=16768]

Sl. No.43

QBID:9082043

Which of the following are the causes of Black Fungus and Yellow Fungus infections?

- A. Poor hygiene
- B. Moisture and heat
- C. Contaminated food
- D. Overuse of steroids

Select the correct option :

- 1. A and D only
- 2. B, C and D only
- 3. A, B and C only
- 4. A, B, C and D

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16769]

2[Option ID=16770]

3[Option ID=16771]

4[Option ID=16772]

Sl. No.44

QBID:9082044

What is the unit of molar absorptivity or absorptivity which is used to determine absorbance A in Beer Lambert's formula?

- 1. $\text{L mol}^{-1} \text{cm}^{-1}$
- 2. $\text{L gm}^{-1} \text{cm}^{-1}$
- 3. Cm
- 4. No unit

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16773]

2[Option ID=16774]

3[Option ID=16775]

4[Option ID=16776]

Sl. No.45

QBID:9082045

In a powerpoint presentation

1. We can insert movie clips but not the sound clips
2. We can insert sound clips but not the movie clips
3. Both movie clips and sound clips can be inserted
4. Both movie clips and sound clips cannot be inserted

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16777]

2[Option ID=16778]

3[Option ID=16779]

4[Option ID=16780]

Sl. No.46

QBID:9082046

A formal document that gives the research objectives, design of achieving these objectives, and the expected outcomes/deliverables of the study is called

1. Research methodology
2. Research proposal
3. Research hypothesis
4. Research report

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16781]

2[Option ID=16782]

3[Option ID=16783]

4[Option ID=16784]

Sl. No.47

QBID:9082047

Atoms of U-238 and U-235 differ in structure by three

1. electrons
2. protons
3. neutrons
4. electrons and three protons

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16785]
 2[Option ID=16786]
 3[Option ID=16787]
 4[Option ID=16788]

Sl. No.48
 QBID:9082048

Which of the following statements about Gas Chromatography is incorrect?

1. Mobile phase is chemically inert carrier gas
2. Injected samples should not be volatile
3. Samples are adsorbed by the stationary phase and then desorbed by a carrier gas
4. Compounds with greater affinity for stationary phase have longer retention time

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16789]
 2[Option ID=16790]
 3[Option ID=16791]
 4[Option ID=16792]

Sl. No.49
 QBID:9082049

Which of the following is the file extension of the PowerPoint application?

1. .jpg
2. .html
3. .ppt
4. .docs

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16793]
 2[Option ID=16794]
 3[Option ID=16795]
 4[Option ID=16796]

Sl. No.50
 QBID:9082050

Which of the following memory of the computer is used to speed up the computer processing?

1. Cache memory
2. RAM
3. ROM
4. None of the above

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16797]

2[Option ID=16798]

3[Option ID=16799]

4[Option ID=16800]