PU Ph D Adult and Continuing Education

1 of 100
118 PU_2015_167
Select the one word or phrase that best completes the sentence.

What _____ nice evening!

- the
- an
- a
- so

2 of 100
119 PU_2015_167
Select the one word or phrase that best completes the sentence.

How long _____ her?

- did you know
- have you known
- had you known
- do you know

3 of 100
105 PU_2015_167
Select the one word or phrase that best completes the sentence.

You'd better _____ a doctor!

- seeing
- saw
- to see
- see

4 of 100
116 PU_2015_167
Select the one word or phrase that best completes the sentence.

I am used _____ coffee for breakfast.

- drinking
- to drinking
- to drink
- drink

5 of 100

117 PU_2015_167
Select the one word or phrase that best completes the sentence.

_____ it's expensive, I'll buy it.

- Whereas
- Despite
- In spite of
- Although

6 of 100

115 PU_2015_167
Select the one word or phrase that best completes the sentence.

_____ the cold, I'll go.

- Instead of
- Whereas
- Although
- Despite

7 of 100

107 PU_2015_167
Select the one word or phrase that best completes the sentence.

It's a long time since we _____!

- had met
- didn't meet
- met
- have met

8 of 100

100 PU_2015_167
Select the one word or phrase that best completes the sentence.

I'll go as soon as she _____.

- calls
- called
- will call
- call

9 of 100

106 PU_2015_167

Select the one word or phrase that best completes the sentence.

I'd rather she _____ me the truth now.

- tell
- tells
- told
- has told

10 of 100

104 PU_2015_167

Select the one word or phrase that best completes the sentence.

I disagree _____ her _____ this.

- with/to
- on/with
- with/with
- with/on

11 of 100

111 PU_2015_167

Select the one word or phrase that best completes the sentence.

I can do it _____ you tell me by tomorrow.

- unless
- although
- whereas
- provided

12 of 100

125 PU_2015_167

Select grammatically correct answers from the given options.

She is poor _____ she is honest.

- As well as
- And
- But
- because

13 of 100

123 PU_2015_167

Select grammatically correct answers from the given options.

If I were a bird, I _____ fly.

- Would
- Will
- Would have
- Should h

14 of 100

120 PU_2015_167

Select grammatically correct answers from the given options.

English is _____ language of the people of England.

- The
- An
- For
- A

15 of 100

122 PU_2015_167

Select grammatically correct answers from the given options.

They have been playing cricket match _____ morning.

- Among
- Since
- Far
- For

16 of 100

127 PU_2015_167

Select grammatically correct answers from the given options.

Ramesh went to school _____ he had finished his meal

- Before
- After
- Because
- As soon as

17 of 100

124 PU_2015_167

Select grammatically correct answers from the given options.

Jawaharlal Nehru was fond _____ children.

- Of
- With

- By
- On

18 of 100

137 PU_2015_167

Find out the common error of the following.

We	sell	wooden	furnitures
a	b	c	d

- a
- b
- c
- d

19 of 100

135 PU_2015_167

Find out the common error of the following.

Jim	is	one of the best student	in his class
a	b	c	d

- a
- b
- c
- d

20 of 100

139 PU_2015_167

Find out the common error of the following.

Mary	is	superior than José	in the drawing
a	b	c	d

- a
- b
- c
- d

21 of 100

142 PU_2015_167

Select the word or phrase which is closest to the opposites (antonyms) in the meaning of underlined word.

He is a sturdy young man

- Strong
- Dynamic
- Ambitious
- Weak

22 of 100

141 PU_2015_167

Select the word or phrase which is closest to the opposites (antonyms) in the meaning of underlined word.

He was my friend, faithful just to me

- Humble
- Plain
- Disloyal
- Truthful

23 of 100

143 PU_2015_167

Select the word or phrase which is closest to the opposites (antonyms) in the meaning of underlined word.

Bhutia is the highest abandoned village in the world

- Inhabited
- Unrestrained
- Adapted
- Deserted

24 of 100

144 PU_2015_167

Select the word or phrase which is closest to the opposites (antonyms) in the meaning of underlined word.

The Familiar ball of the fire which travels through the sky seemed for an instant extinguished.

- Lit
- Hidden
- Faded
- Begun

25 of 100

140 PU_2015_167

Select the word or phrase which is closest to the opposites (antonyms) in the meaning of underlined word.

To liberate the ultimate power in nature

- Eternal
- Closest
- Initial
- Final

26 of 100

187 PU_2015_167

The first international conference on Adult Education organised by UNESCO was held in:-

- Rio de Jenerio
- Tehran
- Kualalampur
- Hamburg

27 of 100

156 PU_2015_167

International Literacy Day is celebrated on:-

- 2nd October
- 19th November
- 8th September
- 18th July

28 of 100

189 PU_2015_167

The target group for Non-Formal Education is:-

- 10-14 age group
- 7-14 age group
- 14-21 age group
- 6-14 age group

29 of 100

165 PU_2015_167

National Commission for Women Empowerment was launched in:-

- 1992
- 2002
- 1999
- 2001

30 of 100

203 PU_2015_167
Narmada movement was started in the state of:-

- Himachal Pradesh
- Rajasthan
- Gujarat
- Andhra Pradesh

31 of 100

161 PU_2015_167
"Learning to be" is an outstanding publication of the:-

- IAEA
- UNICEF
- UNESCO
- ASBAE

32 of 100

193 PU_2015_167
Where was the UN conference on Environment and Development held in 1992?

- Jakarta
- London
- Rio-De-Jenerio
- Paris

33 of 100

181 PU_2015_167
The term Andragogy was coined by:-

- Ivan Illich
- Plato
- Paulo Freire
- Alexander Kapp

34 of 100

186 PU_2015_167
The national legal literacy day is celebrated on:-

- 8th November
- 10th November
- 9th November
- 5th November

35 of 100

194 PU_2015_167
The main office of National Open School in India is:-

- Chennai
- Mumbai
- Delhi
- Uttar Pradesh

36 of 100

160 PU_2015_167
National Policy on Women Empowerment was launched in the year:-

- 2000
- 2002
- 1999
- 2001

37 of 100

211 PU_2015_167
An academic association assembled at one place to discuss the progress of its work and future plans. Such an assembly is known as a:-

- Symposium
- Conference
- Seminar
- Workshop

38 of 100

166 PU_2015_167
"Pedagogy of the Oppressed" was written by:-

- Bertson
- Paulo Freire
- Ivan Illich
- Rabindranath Tagore

39 of 100

184 PU_2015_167
Which is the third dimension of Indian University's function?

- Teaching
- Research
- Extension
- Training

40 of 100
183 PU_2015_167
Experimental world Literacy Programme was launched by UNESCO in:-

- 1984
- 1974
- 1967
- 1954

41 of 100
168 PU_2015_167
The first night school was started in the year:-

- 1924
- 1923
- 1922
- 1920

42 of 100
154 PU_2015_167
Which one of the following Indian states has the largest population size, as per census 2011?

- Madhya Pradesh
- Rajasthan
- Bihar
- Uttar Pradesh

43 of 100
185 PU_2015_167
The state which has the lowest literacy rate in India as per census 2011?

- Tamil Nadu
- Orissa
- Bihar
- Madhya Pradesh

44 of 100
175 PU_2015_167
The first folk high school was established in Denmark:-

- 1944
- 1844
- 1744
- 2004

45 of 100
182 PU_2015_167
Convergence a journal of Adult Education is published by which institute?

- IAEA
- ICAE
- IUACE
- DVV

46 of 100
198 PU_2015_167
Tagore Literacy Award is being given for an outstanding work is:-

- In the promotion of literacy work among youths
- In the promotion of literacy work among farmers
- In the promotion of literacy work among labourers
- In the promotion of literacy work among women

47 of 100
155 PU_2015_167
International Population Day is celebrated on:-

- 11th July
- 10th July
- 20th July
- 18th July

48 of 100
218 PU_2015_167
The main purpose of a pilot study in educational research is:-

- To improve the research plan
- To collect preliminary data
- To train the research team
- To try the research tool

49 of 100
217 PU_2015_167
Which among the following is not a quality of a good quantitative statistical method?

- Flexibility
- Comparability
- Measurability
- Appropriateness

50 of 100
216 PU_2015_167
The term expost facto research is concerned with:-

- Qualitative Research
- Empirical Research
- Applied Research
- Descriptive Research

51 of 100
188 PU_2015_167
Sarva Shiksha Abhiyan was launched during the year:-

- 2007
- 2010
- 2011
- 2001

52 of 100
196 PU_2015_167
"Cultural Action for Freedom" is a book written by:-

- Paulo Freire
- Roby Kidd
- Malcolm Knowles
- James Draper

53 of 100
210 PU_2015_167
An investigator studied the census data for a given area and prepared a write up based on them. Such a write up is called:-

- Article
- Research Paper
- Thesis
- Research Project

54 of 100
209 PU_2015_167
Nehru Literacy Award and Tagore Literacy Award are given by:-

- National Council for Educational Research and Training(NCERT)
- National Council for Teacher Education (NCTE)
- International Universities Association of Continuing Education(IUACE)
- Indian Adult Education Association(IAEA)

55 of 100
197 PU_2015_167
Among the following, which was written by Roby Kidd:-

- Life is Beautiful
- Pedagogy of the Oppressed
- How Adult Learn
- Cultural Action for Freedom

56 of 100
219 PU_2015_167
A population is divided into groups on the basis of socio-economic status which related to the dependent variable. Which of the following is the most appropriate method of sampling?

- Stratified sampling
- Quota sampling
- Cluster sampling
- Systematic sampling

57 of 100
167 PU_2015_167
World declaration on "Education for All" was made in:-

- 1990
- 1996
- 1980
- 1992

58 of 100
204 PU_2015_167
Where the mind is without fear, and the head is held high, where the world is not broken up into fragments by narrow domestic walls was said by:-

- Sardar Vallabhai Patel
- John Dewey
- Sri Aurobindo
- Rabindranath Tagore

59 of 100
208 PU_2015_167
Among the following, which provides school education:-

- NCERT
- DIET
- NIOS

- IGNOU

60 of 100

195 PU_2015_167

Rashtriya Mahila Kosh was established in:-

- 1994
- 1996
- 1993
- 1990

61 of 100

245 PU_2015_167

The square root of variance is:-

- Error Variance
- Standard Deviation
- Standard Error
- Deviation Quotient

62 of 100

251 PU_2015_167

According to APA style reference, the thesis title should contain _____.

- 14 words
- 10 words
- 15 words
- 12 words

63 of 100

227 PU_2015_167

Which one of the following tools will provide more valid information?

- Interview
- Questionnaire
- Observation
- Self-report

64 of 100

238 PU_2015_167

When a researcher combines the findings of several studies systematically and statistically, is known as:-

- Data analysis
- Meta analysis
- Path Analysis

- Critical analysis

65 of 100

229 PU_2015_167

Identify the dependent variable in the following hypotheses: Boys learn syllables slower than girls.

- Syllables
- Gender
- Speed of learning
- Meanings of syllables

66 of 100

258 PU_2015_167

_____was first introduced by the biologist Sewall Wright in 1934 in connection with decomposing the total correlation between any two variables in a causal system.

- Cluster Analysis
- Path Analysis
- Latent Structure Analysis
- Canonical Analysis

67 of 100

222 PU_2015_167

The amount of dispersion of scores about a central value is measured by:-

- Percentile rank
- Standard deviation
- Skewness
- Quartiles

68 of 100

237 PU_2015_167

The type of error involving the acceptance of the null hypothesis when it is false is known as:-

- Type III error
- Type II error
- Type I error
- Type IV error

69 of 100

247 PU_2015_167

G*Power, a statistical software is used to find out:-

- F-Value
- Significance

- Mean
- Effect size

70 of 100
246 PU_2015_167
SPSS is:-

- Statistical package for Statistical study
- Statistical package for Social sciences
- Statistical package for Social scientists
- Statistical package for Scientific studies

71 of 100
235 PU_2015_167
In experimental research, the variable manipulated by the experimenter is:-

- Extraneous variable
- Confounding variable
- Independent variable
- Dependent variable

72 of 100
233 PU_2015_167
Hypothesis is a statement about:-

- Testing the words
- The relationship between two variables
- The tentative solution of the problem
- Intelligent guess of the solution of the problem

73 of 100
252 PU_2015_167
_____provides a framework for establishing the importance of the study as well as a benchmark for comparing the results with other findings.

- Text books
- Journals
- Unpublished thesis
- Literature Review

74 of 100
221 PU_2015_167
A researcher obtained a correlation coefficient of .70 between variables X and Y. This means that the variance common to both the variable is:-

- 70%

- 30%
- 51%
- 49%

75 of 100

236 PU_2015_167

To study the influence of resilience on the scholastic achievement of class XII students, the most appropriate statistical technique used for analysing the data related to this objective will be:-

- Simple Regression
- MANOVA
- Data Analysis
- Multiple Regression

76 of 100

228 PU_2015_167

To study the effect of X on Y, which type of research is appropriate:-

- Philosophical
- Survey
- Historical
- Experimental

77 of 100

250 PU_2015_167

_____ is a means for testing objective theories by examining the relationship among variables.

- Mixed method Research
- Explorative Research
- Qualitative Research
- Quantitative Research

78 of 100

220 PU_2015_167

An operational definition of a variable is one that:-

- Helps in understanding the meaning of the variable
- Helps in stating its relationship with other variables
- Provides directions for controlling the variables
- Provides directions for measuring the variable

79 of 100

234 PU_2015_167

When more than one observer is engaged in research setting, is called as:-

- Investigator triangulation
- Combined triangulation
- Triangulation
- Space Triangulation

80 of 100

223 PU_2015_167

Independent t test is useful when:-

- Relationship between two variables is to be determined
- The scale of measurement is ordinal
- Means of two groups are to be compared
- The distribution is not normal

81 of 100

262 PU_2015_167

The word 'statistics' is used as:-

- Singular and plural both
- Plural
- Singular
- Not used

82 of 100

268 PU_2015_167

Method of complete enumeration is applicable for:-

- Understanding the statistics
- Knowing the production
- Knowing the quantum of export and import
- Knowing the population

83 of 100

282 PU_2015_167

Pie-chart represents the components of a factor by:-

- angles
- circles
- percentages
- sectors

84 of 100

291 PU_2015_167

Data can be well displayed or presented by way of:-

- cross classification
- no display
- dimensional table
- display

85 of 100

264 PU_2015_167

Statistical results are:-

- always incorrect
- cent per cent correct
- misleading
- not absolutely correct

86 of 100

290 PU_2015_167

In a grouped data, the number of classes preferred are:-

- maximum possible
- adequate
- any arbitrarily chosen number
- minimum possible

87 of 100

277 PU_2015_167

Charts and graphs are the presentation of numerical facts by means of:-

- points and lines
- signs
- journals
- books

88 of 100

269 PU_2015_167

A statistical population may consist of:-

- Roman letters
- Alphabets
- an infinite number of items
- a finite number of items

89 of 100

292 PU_2015_167

A complex table represents:-

- only one factor or variable
- two or more factors or variables
- always two factors or variables
- no variable

90 of 100
271 PU_2015_167
Numerical data presented in descriptive form are called:-

- textual presentation
- graphical presentation
- classified presentation
- tabular presentation

91 of 100
272 PU_2015_167
Whether classification is done first or tabulation?

- No criterion.
- Classification precedes tabulation.
- Classification follows tabulation.
- Both are done simultaneously.

92 of 100
270 PU_2015_167
Statistical results are:-

- note true
- absolutely correct
- universally true
- true on average

93 of 100
284 PU_2015_167
Which of the following is a measure of central value?

- Standard deviation
- Mean deviation
- Quartile deviation
- Median

94 of 100
299 PU_2015_167
For comparison of two different series, the best measure of dispersion is:-

- mean deviation
- table
- no range
- standard calculation

95 of 100
293 PU_2015_167
Which of the following statement is not correct?

- The bars in a histogram touch each other
- Multiple bar diagrams also exist
- There are bar diagrams which are known as broken bar diagrams
- The bar in a column chart touch each other

96 of 100
289 PU_2015_167
A study based on complete enumeration is known as:-

- sample survey
- census survey
- case study
- pilot survey

97 of 100
283 PU_2015_167
Mean is a measure of:-

- area
- location (central value)
- correlation
- dispersion

98 of 100
263 PU_2015_167
Statistics deals with:-

- qualitative information
- numbers
- bulk information
- quantitative information

99 of 100
298 PU_2015_167
If the grouped data has open end classes, one cannot calculate:-

- mode
- quartiles
- mean
- median

100 of 100

285 PU_2015_167

Which of the following is not a measure of dispersion?

- mean deviation
- standard deviation
- average deviation from mean
- quartile deviation

160 PU Ph D Nano Sciences and Technology

1 of 100
100 PU_2016_160_E
Lorentz and Fitzgerald putforth the suggestion that there was contraction of bodies:-

- Along the direction of their motion through the earth
- Along the direction of their motion through the sun
- Perpendicular to the direction of their motion through the earth
- None of these

2 of 100
104 PU_2016_160_E
Sound travels 40 m during 20 vibrations its wavelength l is:-

- 0.5 m
- 2 m
- 4 m
- 3 m

3 of 100
118 PU_2016_160_E
"A Moving particle, whatever its nature has wave properties associated with it." is known as:-

- De-Broglie hypothesis
- Bragg's hypothesis
- Frank's hypothesis
- None of these

4 of 100
121 PU_2016_160_E
Water rises through a height h in a capillary tube of internal radius r). If T is the S.T. of water, then the pressure difference between the liquid level in the container and the lowest point of the concave meniscus is:-

- T/r
- r/T
- r/2T
- 2T/r

5 of 100
110 PU_2016_160_E
A gas expands adiabatically at constant pressure such that its temperature T a $1/\sqrt{v}$. The value of C_P/CV of the gas is:-

- 2.00
- 1.50

- 1.30
- 1.67

6 of 100

112 PU_2016_160_E

The ratio n of the velocity of the aircraft to the velocity of sound is referred to as:-

- Mach Number
- Reynolds Number
- Critical Number
- None of these

7 of 100

107 PU_2016_160_E

The flow of heat from a hot body to a cold body is an example of:-

- Irreversible process
- Adiabatic process
- Reversible process
- Isothermal process

8 of 100

103 PU_2016_160_E

A pendulum suspended from the roof of a train has a period T When the train is at rest). When the train is accelerating with a uniform acceleration 'a', the time period of the pendulum will:-

- Increase
- Decrease
- Remain unaffected
- Become infinite

9 of 100

106 PU_2016_160_E

A body at higher temperature Tin Kelvin) radiates heat at a rate which is proportional to:-

- T^4
- T
- T^{-4}
- T^2

10 of 100

101 PU_2016_160_E

The addition of any velocity to the velocity of light merely reproduces:-

- Greater than the velocity of light

- The velocity of sound
- The velocity of light
- None of these

11 of 100

109 PU_2016_160_E

The temperature of a black body is gradually increased. The colour of the body will change from:-

- White-green-red
- Yellow-green-red
- Red-violet-yellow
- Red-yellow-blue

12 of 100

115 PU_2016_160_E

Which of the following experiment is a direct evidence for the quantised nature of energy states in atom?

- Frank Hertz experiment
- Fermi Dirac experiment
- Stern-Gelarch experiment
- None of these

13 of 100

226 PU_2016_160_M

The resistance of a conductor is 5 Ω at 100°C. What is it resistance at 0°C?

- 4 Ω
- 3 Ω
- 2 Ω
- 1 Ω

14 of 100

224 PU_2016_160_M

Moseley's law relates:-

- Frequency and atomic number
- Wavelength and intensity of X-Rays
- Wavelength and angle of scattering
- Frequency and Voltage applied

15 of 100

220 PU_2016_160_M

The property of rotating the plane of vibration of a plane polarised light is called:-

- Optical photometry

- Optical activity
- Optical Illumination
- None of these

16 of 100

222 PU_2016_160_M

In a Joule-Thomson experiment (Throttling process) :-

- The inversion temperature is the same for all real gases
- The inversion temperature is independent of the density of the real gas
- Ideal gases cannot be cooled for any P and T values
- Ideal gases can be cooled for certain P and T values

17 of 100

261 PU_2016_160_D

A particle of mass m is moving with a constant velocity along a line parallel to the positive direction of the X-axis. The magnitude of its angular momentum w.r.t the origin:-

- Remains constant for all positions of the particle
- Goes on decreasing as x is increased
- Goes on increasing as x is increased
- Is zero

18 of 100

263 PU_2016_160_D

A spherical solid ball of a kg mass and radius 3 cm is rotating about an axis passing through its centre with an angular velocity of 50 radian/s. The kinetic energy of rotation is:-

- 4500 J
- 910 J
- 9/20 J
- 90 J

19 of 100

265 PU_2016_160_D

The spin angular momentum of an electron is:-

- In integral multiples of h/2π
- Always the same, h/2π
- In half integral multiples like (s+1/2)*h/2π where S as running integer
- Always the same, h/4π

20 of 100

267 PU_2016_160_D

A resistance potentiometer is a _____.

- Second order instrument
- First order instrument
- Zero order instrument
- None of the above

21 of 100

139 PU_2016_160_E

A polarizer used in dry cell is:-

- Sodium carbonate
- Manganese dioxide
- Lead sulphate
- Ammonium chloride

22 of 100

142 PU_2016_160_E

Which metal is protected by a layer of its own oxide:-

- Ag
- Al
- Fe
- Au

23 of 100

125 PU_2016_160_E

Among the following the molecule with highest dipole moment:-

- $CHCl_3$
- CH_3Cl
- CCl4
- CH_2Cl_2

24 of 100

131 PU_2016_160_E

In the Neptunium series: $_{94}Pu^{241} \rightarrow Am \rightarrow Np \rightarrow Pa \rightarrow {}_{94}U^{233}$:-

- α,α,β,β
- α,β,α,β
- β,β,α,α
- β,α,α,β

25 of 100

145 PU_2016_160_E

There is a plenty of room at the bottom. This was stated by:-

- Issac Newton
- Eric Drexler
- Richard Feynman
- Albert Einstein

26 of 100
134 PU_2016_160_E
A plot of log[A] vs time (t) gives a straight line with negative slope. The order of the reactions:-

- 3
- 1
- 2
- Zero

27 of 100
140 PU_2016_160_E
The poisonous gas evolved in Bhopal gas tragedy:-

- CO
- Methyl isocyanate
- Potassium cyanide
- None of the these

28 of 100
146 PU_2016_160_E
A bucky ball is a molecules consisting of _____ carbon atom.

- 60
- 75
- 50
- 100

29 of 100
143 PU_2016_160_E
Which is 3D silicates:-

- Talc
- Quartz
- Asbestos
- All of the above

30 of 100
124 PU_2016_160_E
What is graphene:-

- Thin film made from fullerenes
- A one atom thick sheet of carbon
- A software tool to measure and graphically represent nanoparticle
- New material made from carbon nanotube

31 of 100

137 PU_2016_160_E

Which of the following ions has zero crystal field stabilization energy in octahedral field:-

- Ca^{2+} low spin
- Fe^{3+} low spin
- Cr^{3+} high spin
- Fe^{3+} high spin

32 of 100

128 PU_2016_160_E

Phenol undergoes the Freidel-Crafts reaction to form mainly the:-

- m-derivative
- P-derivative
- O-derivative
- All the above

33 of 100

230 PU_2016_160_M

Which ration decides the efficiency of nanosubstances:-

- Pressure/volume
- Volume/weight
- Weight/volume
- Surface area/volume

34 of 100

232 PU_2016_160_M

Graphene is a:-

- Wide band gap semiconductor
- Not a semiconductor but behaves like graphite
- A narrow bandgap semiconductor
- Gapless band semiconductor

35 of 100

228 PU_2016_160_M

Who coined the work nanotechnology:-

- Sumiolijima
- Richard Feynman
- Eric Drexler
- Albert Einstein

36 of 100

234 PU_2016_160_M

A TCO is a semiconductor which has:-

- Low electrical resistivity and low optical transparency
- High electrical conductivity and low optical transparency
- High electrical resistivity and high optical transparency
- High electrical conductivity and high optical transparency

37 of 100

268 PU_2016_160_D

Which pair is incorrect:-

- TiO-nonstoichiometric solid
- AgBr-Frenkel defect
- UO_2-anion deficient structure
- $CaTiO_3$-pervoskite

38 of 100

274 PU_2016_160_D

Which of the following is microwave inactive:-

- CO
- NO
- HCl
- Cl_2

39 of 100

272 PU_2016_160_D

The symmetry in quasi crystals is:-

- 4 fold
- 3 fold
- 5 fold
- 6 fold

40 of 100

270 PU_2016_160_D

According to Stefan-Boltzmann law, heat loss proportion to:-

- T
- T^4
- T^6
- T^2

41 of 100

160 PU_2016_160_E

If three identical dice are rolled, then probability that the same number appears on each of them is:-

- 1/36
- 1/18
- 3/28
- 1/6

42 of 100

168 PU_2016_160_E

If f :R $\rightarrow$Rbe a function satisfying f(2x + 3) + f (2x + 7) = 2 $\forall x \in$ R then fundamentalperiod of f (x) is:-

- 8
- 2
- 4
- 16

43 of 100

166 PU_2016_160_E

If a =$\log_{24}12$,b =$\log_{36}24$, c =$\log_{48}36$, then value of (1 + abc) is:-

- 2ac
- 2ab
- 0
- 2bc

44 of 100

148 PU_2016_160_E

Functionsf and g are given by f(x) = $3x^2$ - 1 and g(x) = x^2 + 2. Find an ^{2}expression for:-

- $3x^4 + 12x^2 + 11$
- $4x^2 + 1$
- $3x^4 + 5x^2 - 2$
- $9x^4 + 1$

45 of 100

162 PU_2016_160_E

If A and B are two square matrices of order nnandAB = B, BA = A, then $A^2 + B^2 = 2I$ holds true for thecondition:-

- | A | and | B | are non-zero
- | A | ≠ | B | ≠ 0
- | A | = | B | ≠ 0
- | A | = | B | = 0

46 of 100

150 PU_2016_160_E

If all the roots of equations $(a-1)(1+x+x^2)^2 = (a+1)(x^4+x^2+1)$ are imaginary , then range of 'a' is:-

- $(-\infty, -2]$
- $(2, \infty)$
- $(-2, 2)$
- $(-2, \infty)$

47 of 100

156 PU_2016_160_E

If the binomial coefficients of three consecutive termsin the expansion of $(1 + x)^n$ are in the ratio 1 : 7 : 42 ,then value of 'n' is:-

- 50
- 55
- 65
- 32

48 of 100

158 PU_2016_160_E

Total number of non-negative integral solutions of $18 < x_1+x_2+x_3 \leq 20$, is given by:-

- 441
- 1245
- 685
- 1150

49 of 100

154 PU_2016_160_E

Let complex numbers z_1 and z_2 satisfy the conditions $|z+6i| = 2$ and $|z-4i| = \left(\frac{z-\bar{z}}{2i}\right)$ then minimum value of $|z_1-z_2|$ is:-

- 2
- 4

- 6
- 8

50 of 100

152 PU_2016_160_E

Let x , y be non-zero real numbers and the expression $x^{12} + y^{12}$ $48x^4y^4$ is not less than 'k' , then value of 'k'is equal to:-

- 2^{12}
- -2^8
- -2^{12}
- 2^8

51 of 100

164 PU_2016_160_E

Let 'M' be a 3x3 matrix , where MMT =I and det (M) = 1, then:-

- det(M I) is always zero.
- det(M -I) ≠ 0 .
- det(M + I) is always zero.
- det(M + 2I) = 0.

52 of 100

170 PU_2016_160_E

If $y = f\left(\frac{2x-1}{1+x^2}\right)$ and $f'(x) = \sin^2 x$, then $\left.\frac{dy}{dx}\right|_{x=0}$ is:-

- $\sin^2(1)$
- 1 -cos 2
- $-2\sin^2(1)$
- 1 + cos(1)

53 of 100

240 PU_2016_160_M

If xdy= y(dx + ydy), y (1) = 1 and y(x) < 0, then y(-3) is equal to:-

- 1
- 3
- 2
- 3

54 of 100

238 PU_2016_160_M
Minimum value of function f x) =max{x,x+1,2 -x} is:-

- 3/2
- 1
- 1/2
- 0

55 of 100

242 PU_2016_160_M
If circle $x^2 + y^2 - 2x - 6y + 8 = 0$ meets the y-axis at 'A' and 'B', then circumcentre of ΔABC, where 'C' isthe centre of circle, is given by:-

- (0 , 3)
- (1/2 , 3)
- (1, 1/2)
- (1/2, 5/2)

56 of 100

236 PU_2016_160_M
If f (x) and g (x) are differentiable functions for all x ∈[0 , 1] such that f (0) = g (1) = 2, g (0) = 0 and f(1) = 6, then there exists some value of x ∈(0, 1) forwhich:-

- f(α) = 2g '(α)
- f(α) = 3g '(α)
- f(α) = 4g '(α)
- f'(α) =g '(α)

57 of 100

276 PU_2016_160_D
If the point Pa^2 , a) lies in region correspondingto the acute angle between lines 2y = x and 4y = x ,then 'a' belongs to:-

- 2 , 6
- 4 , 8
- 4 , 6
- 2 , 4

58 of 100

280 PU_2016_160_D

For coplanar points $A(\vec{a}), B(\vec{b}), C(\vec{c}), D(\vec{d})$, if $(\vec{a}-\vec{d})\cdot(\vec{b}-\vec{c}) = (\vec{b}-\vec{d})\cdot(\vec{c}-\vec{a}) = 0$

then point D for ΔABC is:-

- Circumcentre

- Incentre
- Centroid
- Orthocentre

59 of 100

278 PU_2016_160_D

If the pair of angular bisectors of the lines y^2 -3xy + $2x^2$ - 4x + 6y - 16 = 0 forms a triangle with theline 3x + 4y = 12, then the orthocentre of triangle is given by:-

- (5, 8)
- (10, 12)
- (12, 10)
- (8, 5)

60 of 100

282 PU_2016_160_D

If a matrix A is Hermitian, its Eigen values are always:-

- zero
- Real
- Complex
- infinite

61 of 100

174 PU_2016_160_E

Semiconductors have the conductivity in the range of (ohm.m) :-

- 10^{8}
- 10^{-8}
- 10^{4}
- 10^{-2}

62 of 100

180 PU_2016_160_E

Minimum number of slip systems that must be operative during plastic deformation:-

- 4
- 5
- 6
- 3

63 of 100

176 PU_2016_160_E

Anisotropy is shown by_____ materials.

- single crystalline
- amorphous
- glass
- polycrystalline

64 of 100

192 PU_2016_160_E

In a fiber reinforced polymer composites, for a given fiber volume content, Young's modulus depends on the orientation of the fiber with respect to the applied load Which orientation of the fibers will give the maximum value of Young's modulus?

- transverse
- longitudinal
- random
- both transverse and longitudinal

65 of 100

178 PU_2016_160_E

The structures formed by rapid quenching from its molten state is known as:-

- pyrites
- metallic glasses
- chalcogenides
- perovskites

66 of 100

190 PU_2016_160_E

Which one of the following material property is of significance in shock absorber:-

- hardness
- corrosion resistance
- fatigue
- yield strength

67 of 100

194 PU_2016_160_E

Highly sensitive piezoresistive materials are made from:-

- single crystalline Si
- polycrystalline Si
- amorphous Si
- nanocrystalline Si

68 of 100

184 PU_2016_160_E
At smallest sizes, colour of the gold nanoparticles become:-

- pink
- yellow
- red
- colourless

69 of 100

182 PU_2016_160_E
Important property to be considered for shock resisting steel is:-

- low tensile strength
- high corrosion resistant
- low hardness
- high toughness

70 of 100

188 PU_2016_160_E
Fuel cells are used to _____.

- generate energy
- harvest solar energy
- store energy
- induce photoelectric effect

71 of 100

186 PU_2016_160_E
Burgers vector is related to:-

- dislocation
- acceleration
- deceleration
- unit cell

72 of 100

172 PU_2016_160_E
Perovskites have the general formula of:-

- $A^{2+}B^{2+}X^{2-}_3$
- $A^{3+}B^{3+}X^{2-}_3$
- $A^{2+}B^{4+}X^{2-}_3$
- $A^{2+}B^{2+}X^{2-}_2$

73 of 100

251 PU_2016_160_M
Seebeck effect is used in:-

- Thermoelectricity
- Piezoelectricity
- Piezoresistivity
- Electrostriction

74 of 100

247 PU_2016_160_M
Grain boundary area is higher for_____ material.

- amorphous
- single crystalline
- poly crystalline
- nano crystalline

75 of 100

245 PU_2016_160_M
For piezoelectricity generation:-

- silicon is preferred
- materials with charge asymmetry in the unit cell is preferred
- nanocrystalline materials are preferred
- centro symmetric structures are preferred

76 of 100

249 PU_2016_160_M
Residual stress is not measured by:-

- transmission electron microscopy
- substrate curvature method
- nanoindentation
- X-ray diffraction

77 of 100

291 PU_2016_160_D
The phenomenon of the growth of smaller particles in sol to bigger particle is known as:-

- annealing
- Ostwald ripening
- normalizing
- sintering

78 of 100

289 PU_2016_160_D
The conductivity value:-

- increases with temperature for semiconductor
- does not depend on mobility of charge carriers
- does not change with dopant nature
- increases with temperature for metals

79 of 100

285 PU_2016_160_D
Mean free path for electronic conduction is higher in:-

- nanotube
- nanowire
- nanoparticle
- quantum dots

80 of 100

287 PU_2016_160_D
The saturation magnetization diminishes gradually and then abruptly drops to zero at the temperature known as:-

- Curie
- Meissner
- Neel
- Hall

81 of 100

216 PU_2016_160_E
The biosynthesis of both RNA and proteins is dependent upon the nucleotide sequence of:-

- tRNA
- DNA
- mRNA
- rRNA

82 of 100

208 PU_2016_160_E
A cell to cell channel is made up of:-

- 24 connexin
- 12 connexin
- 14 connexin
- 10 connexin

83 of 100
210 PU_2016_160_E
Which of the following eukaryotic cell lacks nucleus:-

- Nerve cell
- WBC
- RBC
- Platelets

84 of 100
218 PU_2016_160_E
When a molecule of pyruvic acid is subjected to anaerobic oxidation there is:-

- Gain of 2 molecules of ATP
- Loss of 3 molecules of ATP
- Loss of 6 molecules of ATP
- Gain of 4 molecules of ATP

85 of 100
202 PU_2016_160_E
Which of the following is a non-membranous organelle?

- Plastid
- Endoplasmic Recticulum
- Ribosome
- Mitrochondrium

86 of 100
212 PU_2016_160_E
Cell growth occurs during:-

- Interphase and Postmitotic growth
- Interphase
- Mitotic phase
- Postmitotic growth

87 of 100
214 PU_2016_160_E
In human beings, which part shows the minimum increase in weight from birth to adulthood?

- Brain
- Fat
- Skeleton
- Muscles

88 of 100
196 PU_2016_160_E
Who among the following proposed the hypothesis: the bodies of animals and plants are composed of cells and products of cells?

- Robert Hooke
- Theodore Schwann
- Darwin
- Rudolf Virchow

89 of 100
206 PU_2016_160_E
G-protein is:-

- Tetrameric
- Bimeric
- Unimeric
- Trimeric

90 of 100
204 PU_2016_160_E
The cell wall of plants are made up of fibrils which predominantly contain:-

- Glucose
- Proteins
- Phospholipids
- Polysaccharides

91 of 100
200 PU_2016_160_E
Each ribosome consists of two unequal subunits composed of:-

- RNA and proteins
- Only RNA
- DNA and proteins
- RNA and carbohydrates

92 of 100
198 PU_2016_160_E
Thylakoids in a plastid are place one above the other like a stack of coins to form a:-

- Granum
- Crista
- Stroma
- Matrix

93 of 100
256 PU_2016_160_M
Different types of haemoglobin are produced in different stages of human development. It is an example of:-

- Multiplegene family
- Split genes
- Repeated genes
- Gene replacement

94 of 100
252 PU_2016_160_M
The acetyl groups for cytoplasmic fatty acid synthesis appear in the cytoplasm, as a result of the activity of:-

- Citrate synthetase
- Isocitrate dehydrogenase
- Thiolase
- Citrate lyase

95 of 100
254 PU_2016_160_M
Microsatellite sequences are repeat units with base pairs:-

- 11-60
- 5-30
- 1-6
- 20-120

96 of 100
258 PU_2016_160_M
The enzyme which converts glucose to glucose 6-phosphate is:-

- Glucose 6-phosphate
- Hexokinase
- Glucose synthetase
- Phosphorylase

97 of 100
296 PU_2016_160_D
Life without air is:-

- free from oxidative damage
- reduction
- impossible

- anaerobic

98 of 100

294 PU_2016_160_D

When ATP is converted into ADP it releases:-

- Energy
- Hormones
- Oxygen
- Enzymes

99 of 100

298 PU_2016_160_D

Zymase is:-

- Enzyme complex
- Pyruvate dehydrogenase
- Acetaldehyde dehydrogenase
- Pyruvate decarboxylase

100 of 100

292 PU_2016_160_D

Respiration is an:-

- Anabolic process
- Endergonic process
- Exothermic process
- Endothermic process

Examination: **Ph.D. Nanoscience and Technology**

Section 1 - Section 1

Question No.1 4.00

Bookmark

If degree of freedom (F) is equal to zero, then the system is called by

- Invariant
- Bivariant
- Univariant
- Trivariant

Question No.2 4.00

Bookmark

Basicity order of pyrrole, furan, thiophene and benzene compounds is

- Pyrrole>thiophene>furan>benzene
- Furan>pyrrole>thiophene>benzene
- benzene>thiophene>furan>pyrrole
- Pyrrole>furan>thiophene>benzene

Question No.3 4.00

Bookmark

- 2
- 3
- 1
- 4

Question No.4 4.00

Bookmark

If $(x+iy) = \sqrt{\frac{1+2i}{3+4i}}$, then $(x^2+y^2)^2 =$

- 5
- $\frac{2}{5}$
- $\frac{5}{2}$
- $\frac{1}{5}$

Question No.5 4.00

Bookmark

Which is a vector in the following?

- Volume
- Mass
- Distance
- Velocity

Question No.6 4.00

Bookmark

She studies very hard for the exams, _____?

- doesn't she?

- isn't it?
- does she?
- is it?

Question No.7 4.00

Bookmark

Nidhi walks 10 metres in front and 10 metres to the right. Then every time turning to her left, she walks 5, 15 and 15 metres respectively. How far is Nidhi now from her starting point?

- 10 metres
- 5 metres
- 15 metres
- None of the above

Question No.8 4.00

Bookmark

$t_{1/2}$ of a second order reaction is ?

- 1/2ka
- 1/ka2
- 0.693/k
- 1/ka

Question No.9 4.00

Bookmark

The dimension of a plank's constant 'h' are?

- MLT^{-2}
- MLT
- ML^2T^{-1}
- MLT^{-1}

Question No.10 4.00

Bookmark

Measurement of disorder of the system is called as

- Entropy
- Internal energy
- Free energy
- Enthalpy

Question No.11 4.00

Bookmark

Statement: Apart from it's entertainment value of Television, it's educational value cannot be ignored
Assumptions:
I. People take Television to be the means of entertainment only.
II. The educational value of Television is not realized properly

- If both I and II are implicit
- If only assumption I is implicit
- If neither I nor II is implicit
- If only assumption II is implicit

Question No.12 4.00

Bookmark

A perfect black body

- Absorbs all the incident radiation
- Allows all the incident radiation
- Reflects all the incident radiation
- None of these

Question No.13 4.00

Bookmark

Match the following:

a. Newton-Raphson	1. Integration
b. Runge-kutta	2. Root finding
c. Gauss-seidel	3. Ordinary differential equations
d. Simpson's rule	4. Solution of system of linear equations

- a-2, b-3, c-4, d-1
- a-3, b-2, c-1, d-4
- a-1, b-4, c-2, d-3
- None of these

Question No.14 4.00

Bookmark

Which of the following can be used for cathodic protection?

- Al
- Cd
- Cu
- none of the these

Question No.15 4.00

Bookmark

If A+B means A is daughter of B,
A-B means A is husband of B
A × B means A is brother of B

From the statement A × B × C × D, which of the following statement is not necessarily true?

- D is brother of C
- B is the brother of A
- A, B, C are male
- C is the brother of A

Question No.16 4.00

Bookmark

Neutral amino acid is

- Histidine
- Leucine
- Aspartic acid
- Lysine

Question No.17 4.00

Bookmark

The value of $lim_{x\to\infty}\frac{4x^2-5x}{1-3x^2}$

- $\frac{-3}{4}$
- $\frac{3}{4}$

- $\frac{4}{3}$
- $\frac{-4}{3}$

Question No.18 4.00

Bookmark

This is the school where I studied till class 5.
The underlined word is a

- preposition
- adverb
- adjective
- pronoun

Question No.19 4.00

Bookmark

If A = $x^2y\bar{i}$- $xyz\bar{j}$+ $yz^2\overline{k}$, determine div $\overline{A}$ at point (1,2,3)

- 12
- 11
- 15
- 13

Question No.20 4.00

Bookmark

How many ^{13}C resonance signals are predicted for 1-phenyl-1-propanol?

- 8
- 10
- 9
- 7

Question No.21 4.00

Bookmark

Which is a correct form of Cauchy-Riemann equation

- $\frac{\partial u}{\partial x} = \frac{-\delta v}{\delta y}$
- $\frac{\partial u}{\partial x} = \frac{\delta v}{\delta y}$
- $\frac{\partial u}{\partial y} = \frac{\delta v}{\delta x}$
- $\frac{\partial v}{\partial x} = \frac{\delta u}{\delta y}$

Question No.22 4.00

Bookmark

$A=\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix}$, using cayley-Hamilton theorem find the value of A^2 ?

- $\begin{bmatrix}22 & 15\\ 10 & 7\end{bmatrix}$
- $\begin{bmatrix}8 & 11\\ 15 & 22\end{bmatrix}$
- $\begin{bmatrix}7 & 10\\ 15 & 22\end{bmatrix}$
- $\begin{bmatrix}7 & 11\\ 16 & 21\end{bmatrix}$

Question No.23 4.00

Bookmark

Following which is not a linear equation

- $\frac{dy}{dx} + xy = 1$
- $\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = 0$
- $\frac{d^4y}{dx^4} + 3y = \sin x$
- $\frac{d^2y}{dx^2} + y\frac{dy}{dx} + y = x$

Question No.24 4.00

Bookmark

Which of the following has more tolerance for acidic pH (lower pH)?

- Yeast and moulds
- Bacteria
- E. coli
- None of these

Question No.25 4.00

Bookmark

Which one is the heaviest particulate component of the cell?

- Cytoplasm
- Mitochondria
- Nucleus
- Golgi apparatus

Question No.26 4.00

Bookmark

What is the process of adding impurity to an intrinsic semiconductor?

- Ionization
- Annihilation
- Doping
- Recombination

Question No.27 4.00

Bookmark

The order and degree of the differential equation $\left[1 + 4\frac{dy}{dx}\right]^{\frac{2}{3}} = 4\frac{d^2y}{dx^2}$ are respectively

- $1, \frac{2}{3}$
- $2, \frac{2}{3}$
- 3, 2
- 2, 3

Question No.28 4.00

Bookmark

What is the diameter of the atom?

- 10^{-10} mm
- 10^{-10} µm
- 10^{-10} cm
- 10^{-10} m

Question No.29 4.00

Bookmark

A can finish a work in 18 days and B can do the same work in half the time taken by A. Then, working together, what part of the same work they can finish in a day?

- 0 1/8
- 0 1/4
- 0 1/6
- 0 1/2

Question No.30 4.00

Bookmark

Who discovered superconductivity in 1911?

- KamerlinghOnnes
- Charless Coulomb
- Alex Muller
- Geory Bednorz

Question No.31 4.00

Bookmark

In the medium of free space, the divergence of the electric flux density will be

- -1
- 1
- 0

- Infinity

Question No.32 4.00

Bookmark

What is the x-axis of a mass spectrum?

- Mass/charge
- Charge
- Mass/energy
- Mass

Question No.33 4.00

Bookmark

Crumb : Bread ::

- Water : Bucket
- Tea : Cup
- Flower : Vase
- Splinter : Wood

Question No.34 4.00

Bookmark

Miller indices for Octahedral plane in cubic crystal

- (100)
- (110)
- (111)
- None of the these

Question No.35 4.00

Bookmark

What is the generation time of Escherichia coli?

- 200 hours
- 20 hours
- 20 minutes
- 20 days

Question No.36 4.00

Bookmark

One of characteristic properties of polymer material _____ .

- High mechanical strength
- High elongation
- High temperature stability
- Low hardness

Question No.37 4.00

Bookmark

Find the odd one out?

- Withdrawal
- Deduction
- Debit
- Deposit

Question No.38 4.00

Bookmark

In Photosynthesis, what is the source of electrons?

- NADH
- Carbohydrates
- CO_2
- Water

Question No.39 4.00

Bookmark

The angle between the lines $2x = 3y = -z$ and $6x = -y = -4z$

- 90^o
- 30^o
- 45^o
- 60^o

Question No.40 4.00

Bookmark

If fluid expands suddenly in to the vacuum through an orifice of large dimension, then such process is called as

- Adiabatic expansion
- Throttling
- Free expansion
- Hyperbolic expansion

Question No.41 4.00

Bookmark

The time-independent Schrödinger wave equation is $H\Psi = E\Psi$, where **H** is

- Hamiltonian operator
- Kronecker delta
- Ladder operator
- None of the above

Question No.42 4.00

Bookmark

The probability that the three cards, drawn from a pack of 52 cards, are all black is

- $\frac{2}{19}$
- $\frac{3}{17}$
- $\frac{1}{17}$
- $\frac{2}{17}$

Question No.43 4.00

Bookmark

Polymers are _____ in nature.

- Organic
- Inorganic
- Both (A) and (C)
- None of the these

Question No.44 4.00

Bookmark

If $f(x) = \cos(3x)$, then $f'(\frac{\pi}{9})$

- $\frac{-3\sqrt{3}}{2}$
- $\frac{3\sqrt{3}}{2}$
- $\frac{-\sqrt{3}}{2}$
- $\frac{\sqrt{3}}{2}$

Question No.45 4.00

Bookmark

Fermi energy level for intrinsic semiconductors lies

- At middle of the band gap
- Close to conduction band
- Close to valence band
- None of the these

Question No.46 4.00

Bookmark

Correct the error in the italicized part of the sentence by choosing the most appropriate options
Job was a tiny man, barely five feet tall, with *a spright walk*

- spright walk
- spright walkingly
- a sprightly walking
- a sprightly walk

Question No.47 4.00

Bookmark

In Uv-visible spectrum, absorbance changes with..

- Path length
- Concentration
- Absorptivity
- All of the above

Question No.48 4.00

Bookmark

Statement: Ten Candidates, who were on the waiting list could finally be admitted to the course.
Assumptions:
I. A large of number of candidates were on the waiting list.
II. Wait listed candidates do not ordinarily get admission.

- If both I and II are implicit

- If both I and II are implicit
- If neither I nor II is implicit
- If only assumption II is implicit
- If only assumption I is implicit

Question No.49 4.00

Bookmark

Following equation is related to corrosion rate

- Nernst equation
- Faraday's equation
- Both A and B
- None of the these

Question No.50 4.00

Bookmark

The co-ordination number of cubic close packed (ccp) crystal structure is?

- 8
- 6
- 10
- 12

Question No.51 4.00

Bookmark

$f^{(0)}(x) = \text{Sin(x)}$, then $f^{(5)}(x) = ?$

- cos x
- sin x
- - cos x
- -sin x

Question No.52 4.00

Bookmark

The hydrogen bonds between peptide linkages of a protein molecules are interfered by

- Guanidine
- Salicylic acid
- Uric acid
- Oxalic acid

Question No.53 4.00

Bookmark

Porcelain is made for making crockery which is itself being prepared by

- Mud
- Silicon
- Soil
- Clay

Question No.54 4.00

Bookmark

An organism has an optimal growth rate when the hydrogen ion concentration is very high. This organism is

- Aerotolerant anaerobe
- Osmotolerant
- Neutrophile
- Acidophilec

Question No.55 4.00

Bookmark

The chemical formula of hypo-phosphorous acid is...

- H_3PO_2

- $H_5P_3O_{10}$
- $H_4P_2O_7$
- H_3PO_3
- H_3PO_2

Question No.56 4.00

Bookmark

The digestive enzymes of cellular compounds are confined to

- Ribosomes
- Polysomes
- Lysosomes
- Peroxisomes

Question No.57 4.00

Bookmark

The molecule which does not possess a permanent dipole moment is

- NF_3
- CH_2Cl_2
- BF_3
- NO_2

Question No.58 4.00

Bookmark

The correct order of basicity of lanthanide ion is

- $La^{3+} > Ce^{3+} > Eu^{3+} > Lu^{3+}$
- $La^{3+} > Lu^{3+} > Ce^{3+} > Eu^{3+}$
- $Ce^{3+} > Lu^{3+} > La^{3+} > Eu^{3+}$
- $Lu^{3+} > Ce^{3+} > Eu^{3+} > La^{3+}$

Question No.59 4.00

Bookmark

Buffering action of haemoglobin is mainly due to its

- Glutamine residues
- Lysine residues
- Histidineresidues
- Arginine residues

Question No.60 4.00

Bookmark

Which of the following formulae can be used to determine the Debroglie wavelength?

- $\lambda = h/mv$
- $\lambda = hmv$
- $\lambda = mv/h$
- $\lambda = hm/v$

Question No.61 4.00

Bookmark

The structure of $XeOF_4$ molecule is...

- Square planar
- Square pyramidal
- distorted octahedral
- Pyramidal

Question No.62 4.00

Bookmark

Coordination number in simple cubic crystal structure

- 4
- 2
- 3
- 1

Question No.63 4.00

Bookmark

If $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then $A^2 + 2A$ equals to

- A
- 4A
- 2A
- 3A

Question No.64 4.00

Bookmark

A 2nd order reflection was observed with the angle of 22.2^0, when x-rays of wavelength 300 pm are allowed to fall on (111) plane of the crystal. Find edge length of unit cell. Sin $22.2^0 = 0.3778$

- 1543 pm
- 1443 pm
- 1643 pm
- 1343 pm

Question No.65 4.00

Bookmark

The pH of blood is 7.4 when the ratio between H_2CO_3 and $NaHCO_3$ is

- 1 : 25
- 1 : 30
- 1:10
- 1 : 20

Question No.66 4.00

Bookmark

In which of the following forms can Maxwell's equation not be represented

- Differential
- Harmonic
- Integral
- Static

Question No.67 4.00

Bookmark

If A and B are two scalars, then $\nabla(AB)$

- $\nabla A.\nabla B$
- $B\,(\nabla B) + A(\nabla A)$
- $\nabla A + \nabla B$
- $A(\nabla B) + B\,(\nabla A)$

Question No.68 4.00

Bookmark

Which one of the following metabolites is not directly produced in the hexosemonophosphate pathway?

- Dihydroxy acetone phosphate
- Fructose-6-phosphate
- CO_2
- Erythrose-4-phosphat

Question No.69 4.00

Bookmark

The magnitude of adsorption of gas on solid surface is...

- increases with temperature
- Decreases with temperature
- Increases with pressure
- Both B&C

Question No.70 4.00

Bookmark

In many proteins the hydrogen bonding produces a regular coiled arrangement called

- α-helix
- β-helix
- Both (A) and (B)
- None of these

Question No.71 4.00

Bookmark

Being awarded the Best Singer in 2010 marked a _____ in her life.

- sign-post
- memorial
- milestone
- yardstick

Question No.72 4.00

Bookmark

IR stretching frequency range of N-H bond is?

IR stretching frequency range of N-H bond is?

- 2500 - 3300
- 3300 – 3500
- 2220 – 2260
- 1650 - 1780

Question No.73 4.00

Bookmark

In p-type semiconductors, number of holes _____ number of electrons.

- is double the
- Greater than
- is Equal to
- Less than

Question No.74 4.00

Bookmark

If A is 3 x 3 Non-singular matrix such that $AA^T = A^TA$ and $B = A^{-1}A^T$, then BB^T is equal to

- I + B
- I
- B^{-1}
- $(B^{-1})^T$

Question No.75 4.00

Bookmark

Example for piezo-electric material

- Rochelle salt
- Barium Titanium oxide
- Lead zirconate
- Potassium niobate

Question No.76 4.00

Bookmark

Faster among the waves and rays is

- Both have no speed
- Rays
- Both have same speed
- Waves

Question No.77 4.00

Bookmark

Using Newton-Raphson method, find a root correct to three decimal places of the equation $x^3 - 3x - 5 = 0$

- 2.222
- 2.275
- 2.272
- 2.279

Question No.78 4.00

Bookmark

Choose the best synonym of the italicized word.
Dr. Elango is in the habit of using *obsolete* words.

- difficult
- outdated
- simple
- wrong

Question No.79 4.00

Bookmark

The most active site of protein synthesis is the

- Cell sap
- Ribosome
- Mitochondrion
- Nucleus

Question No.80 4.00

Bookmark

Assume that a particle of mass 'm' is confined to a cubic box and its energy is $14h^2/8ma^2$. What is the degeneracy of this level?

- 1
- 8
- 2
- 6

Question No.81 4.00

Bookmark

Study the following information carefully and answer the question below it

The Director of an MBA college has decided that six guest lectures on the topics of Motivation, Decision Making, Quality Circle, Assessment Centre, Leadership and Group Discussion are to be organised on each day from Monday to Sunday.
(i) One day there will be no lecture (Saturday is not that day), just before that day Group Discussion will be organised.
(ii) Motivation should be organised immediately after Assessment Centre.
(iii) Quality Circle should be organised on Wednesday and should not be followed by Group Discussion
(iv) Decision Making should be organised on Friday and there should be a gap of two days between Leadership and Group Discussion

Which of the following information is not required for the above lecture arrangements?

- Only (i)
- Only (ii)
- Only (iii)
- All are required

Question No.82 4.00

Bookmark

Choose the best synonym of the italicized word.
Children of excessively indulgent parents often become very *recalcitrant.*

- dependent
- indolent
- insolent
- disobedient

Question No.83 4.00

Bookmark

Solenoid of length 15 cm has 300 turns. If current flowing through solenoid is 5A, magnetic field inside solenoid will be

- 1.3X102
- 2.3X102
- 2.3X103
- 1.3X103

Question No.84 4.00

Bookmark

Isoelectric pH is that pH at which protein is electrically:

- Neutral
- Anionic
- Cationic
- None of these

Question No.85 4.00

Bookmark

Units for electric field strength

- V/cm
- A/cm^2
- $cm^2/V.s$
- mho/meter

Question No.86 4.00

Bookmark

Calculate the entropy of mixing of 1 mole of oxygen gas and 2 moles of hydrogen gas, assuming that no chemical reaction occurs and the gas mixture behaves ideally.

- 14.8 JK-1
- 17 JK-1
- 15.8 JK-1
- 16 JK-1

Question No.87 4.00

Bookmark

Insulin is made up of

- A-chain having 21 and B-chain having 30 amino acid residues
- A single polypeptide chain having 51 aminoacid residues
- A single polypeptide chain having 84 amino acid
- A-chain having 30 and B-chain having 21 amino acid residues

Question No.88 4.00

Bookmark

Metals can transmit these ____.

- x-rays
- Microwaves
- Visible light
- Radio ways

Question No.89 4.00

Bookmark

Study the following information carefully and answer the question below it

Lakshman passes through seven lanes to reach his school. He finds that 'Truth lane' is between his house and 'Lie

lane'. The third lane from his school is 'Karma lane'. 'Dharma lane' is immediately before the 'Yog lane'. He passes 'Salvation lane' at the end, 'Lie lane' is between 'Truth lane' and 'Dharma lane', the sixth lane from his house is 'Devotion lane'.

If Lakshman's house, each lane and his school are equidistant and he takes 2 minutes to pass one lane, then how long will he take to reach school from his house?

- 14 minutes
- 16 minutes
- 13 minutes
- 15 minutes

Question No.90 4.00

Bookmark

Given that, $E^0_{Cu+/Cu} = 0.15$ V; $E^0_{Cu2+/Cu+} = 0.50$ V find the value of $E^0_{Cu2+/Cu}$

- -0.215 V
- 0.215 V
- -0.325 V
- 0.325 V

Question No.91 4.00

Bookmark

Ceramics can conduct

- Conduct heat and electricity
- Heat
- do not conduct heat and electricity
- Electricity

Question No.92 4.00

Bookmark

When their father died, their elder brother sold the old house and _____ in a small flat in a far-off suburb

- set them up
- put them down
- set them down
- put them up

Question No.93 4.00

Bookmark

According to faraday's law "EMF" stands for

- Electromagnetic friction
- Electromotive force
- Electromagnetic field
- Electromagnetic force

Question No.94 4.00

Bookmark

The term obligate anaerobe refers to an organism that

- doesn't use oxygen but tolerates it
- is killed by oxygen
- uses oxygen when present or grows without oxygen when oxygen is absent
- prefers to grow without oxygen

Question No.95 4.00

Bookmark ☐

$(\partial U/\partial P)_S$ = ?

- $(\partial V/\partial S)_P$
- $-(\partial P/\partial T)_S$
- $-(\partial V/\partial S)_P$
- $(\partial P/\partial T)_S$

Question No.96 4.00

Bookmark ☐

Which one of the following is ferro-electric material?

- Potassium niobate
- Quartz
- Lead titanate
- Lead zirconate

Question No.97 4.00

Bookmark ☑

Based on the information given answer the following question.
1. In a family of six persons, there are people from three generations. Each has separate professions and they like different colours. There are two couples.
2. Shyam is an Engineer and his wife is not a doctor and she does not like Red colour.
3. Chartered Accountant likes green colour and his wife is a teacher.
4. Manisha is the mother-in-law of Sunita and she likes orange colour.
5. Vimal is the grand father of Tarun and tarun is the Principal and likes black colour.
6. Nyna is the grand daughter of Manisha and she likes blue colour. Nyna's Mother likes white colour.

What is the profession of Sunita?

- Teacher
- Principal
- Chartered Accountant
- Cannot be determined

Question No.98 4.00

Bookmark ☐

Choose the best antonym of the italicized word.
The deliberate *suavity* of Olaf's behavior made the emotions of the audience volatile.

- politeness
- impetuosity
- pleasantness
- stupidity

Question No.99 4.00

Bookmark ☐

Select the Pair that best respresents the relationship that is given in the question:
Explore : Discover

- Think : Relate
- Tree : Wood
- Research : Learn
- Books : Knowledge

Question No.100 4.00

Bookmark ☐

The transport number of cation is 0.45; calculate the transport number of anion.

- 0.45
- – 0.55
- -0.45
- 0.55