PREVIOUS YEAR PAPER

DSSSB PGT Physics (Male) 2021 — 23 July 2021, Shift 2

DSSSB PGT · 23 July 2021 · Shift 2

226 of the paper's 300 questions · +1 for a correct answer, −0.25 for a wrong one · 180 minutes

Left out of the original paper: 74 (any question that needs a figure, a symbol or formatting we cannot show, or whose text did not read back cleanly from the booklet).

Questions from the Delhi Subordinate Services Selection Board's paper of 23 July 2021, Shift 2. Each question is followed by its answer, and the answer key is repeated on the last page.

Take it as a timed practice test: exambharo.com/dsssb-pgt/previous-year-papers/dsssb-pgt-2021-physics-male-23-jul-shift-2/

Mental Ability

1. From the given responses, find the missing term in the series.
S3L, M5O, G9R, ?

(a) A17U
(b) A15V
(c) H17F
(d) C13K

Answer: (a)

2. From the given responses, find the missing letter c' er in the series.
TK, RM, PO, ?, LS

(a) MP
(b) NQ
(c) MN
(d) PK

Answer: (b)

3. Choose the odd one from the given alternatives.

(a) Y24A
(b) R14D
(c) Q10G
(d) D18U

Answer: (d)

4. Select the related word from the given alternatives.
Temperature : degree : : Energy : ?

(a) Litre
(b) Power
(c) Joule
(d) Distance

Answer: (c)

5. In the following question, select the related letters from the given alternatives.
CHMQ : HMRV : : EAFO : ?

(a) JKVG
(b) JKVH
(c) JKIV
(d) JFKT

Answer: (d)

6. In a certain code language, 'FUNCTION' is written as 'CNUFNOIT'. How will 'OXYTACIN' be written as in that language?

(a) TYXONICA
(b) TXYONICA
(c) TYXOINCA
(d) TYXONIAC

Answer: (a)

7. In a row of girls, if Rohini who is 12th from the left and Mihika who is 9th from the right interchange their seats, Rohini becomes 18th from the left. How many girls are there in the row?

(a) 17
(b) 20
(c) 22
(d) 26

Answer: (d)

8. Sonam is older than Renu. komal is your [illegible] tha[illegible]enu. Priya is older than Sonam. Who is the eldest of them?

(a) Priya
(b) Sonam
(c) Renu
(d) Komal

Answer: (a)

9. In the question below, there are two statements followed by four conclusions given in options. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusion logically follow(s) from the given statements.
Statements:
Some inks are not links.
Some inks are pinks.

(a) Some links are not inks
(b) All inks are pinks
(c) Some inks are not pinks
(d) All inks are links

Answer: (a)

10. In the question given below, there are two statements followed by three conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusion logically follow(s) from the given statements.
Statements:
I. All sparrows are parrots.
II. All parrots are birds.
Conclusion:
I. No sparrows are birds
II. No birds are sparrows
III. Some birds are sparrows

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Only conclusion III follows

(d) All conclusions follow

Answer: (c)

11. In the question given, relations between different elements are shown in the statements. These statements are followed by two conclusions. Find out which of the given conclusions follow(s) the given statements and select the correct alternative from the given choices.
Statement:
$Z \leq J = Y \leq K = X \geq L$
Conclusions:
I. $Z < K$
II. $Z = K$

(a) If only conclusion I follows

(b) If only conclusion II follows

(c) If either conclusion I or conclusion II fo

(d) If neither conclusion I nor conclusion II follows

Answer: (c)

12. Select the related number from the given alternatives.
5 : 124 : : 6 : 215 : : 7 : ?

(a) 125

(b) 248

(c) 342

(d) 343

Answer: (c)

13. Find the missing number in the series given below.
128, ?, 82, 62, 44, 28

(a) 99

(b) 104

(c) 109

(d) 106

Answer: (b)

16. A boy runs 20m towards East and runs 10m after taking a right turn and again turns to right and runs 10m and then turns to left and runs 5m and again turns to left and runs 12m and finally turns to left and runs 5m. Now in which direction is he facing?

(a) South

(b) North

(c) East

(d) West

Answer: (b)

General Awareness

21. India Gate is a memorial built to commemorate the Indian soldiers who died in which of the following events?

(a) 1857 Revolt

(b) 1919 Jallianwala Bagh Massacre

(c) 1947 India-Pak War

(d) World War 1

Answer: (d)

22. How many verses are there in the Samaveda?

(a) 900

(b) 1001

(c) 1028

(d) 1875

Answer: (d)

23. The Elephanta caves is a conglomeration of how many caves?

(a) 5

(b) 7

(c) 9

(d) 11

Answer: (b)

24. Which economist is known as the brainchild behind the 1991 LPG reforms in India?

(a) Amartya Sen

(b) MS Swaminathan

(c) Manmohan Singh

(d) Verghese Kurien

Answer: (c)

25. Which of the following is called GDP Deflator?
    (a) Ratio of nominal to real GNP
    (b) Ratio of nominal to real CPI
    (c) Ratio of real to nominal GNP
    (d) Ratio of nominal to real GDP

    Answer: (d)

26. Which of the following is used in making Pencils?
    (a) Graphite
    (b) Silicon
    (c) Charcoal
    (d) Phosphorus

    Answer: (a)

27. What does the P in pH Value stands for?
    (a) Purity
    (b) Physical
    (c) Potenz
    (d) Phosphorus

    Answer: (c)

28. Which of the following is the highest peak in the F ern Ghats of India?
    (a) Anai Mudi
    (b) Mount Everest
    (c) Kanchenjhunga
    (d) Mahendragiri

    Answer: (d)

29. What is the name of the outermost range of the Himalayas?
    (a) Pir Panjal
    (b) Shiwaliks
    (c) Dhaula Dhar
    (d) Mahabharat

    Answer: (b)

30. In which year was the Dandi March organized?
    (a) 1920
    (b) 1925
    (c) 1930
    (d) 1932

    Answer: (c)

31. When was the Taj Mahal designated as a UNESCO World Heritage Site?
    (a) 1983
    (b) 1947
    (c) 1962
    (d) 2001
    Answer: (a)

32. Whom did the Mughal Army fight in the 2nd Battle of Panipat?
    (a) Maharana Pratap
    (b) Hemu
    (c) Sher Shah Suri
    (d) Chhatrapati Shivaji
    Answer: (b)

33. What part of the Indian Constitution provides for the Directive Principles of State Policy?
    (a) 1
    (b) 2
    (c) 4
    (d) 6
    Answer: (c)

34. What Article of the Indian Constitution provides fc ee legal aid to the poor and weaker sections of the society?
    (a) 30
    (b) 39A
    (c) 36
    (d) 41
    Answer: (b)

35. Who is the author of the book "Wild and Wilful"?
    (a) Neha Sinha
    (b) NV Ramana
    (c) Sanjeev kumar
    (d) Saurabh Garg
    Answer: (a)

36. Who among the following received the Vyas Samman 2020?
    (a) Nasima Sharmma
    (b) Leeladhar Jagufi
    (c) Sharad Pagare
    (d) Amitav Ghosh
    Answer: (c)

37. Which among the following is credited for making the first fully indigenous silent feature film in India?

(a) Dhirendra Nath Ganguly
(b) Satyajit Ray
(c) Dada Saheb Phalke
(d) Raj Kapur

Answer: (c)

38. What is India's rank in UN World Happiness Report 2021?

(a) 120th
(b) 149th
(c) 123th
(d) 139th

Answer: (d)

39. Who is the first male cricketer to reach 3000 T20 international runs?

(a) Chris Gayle
(b) AB De Villiers
(c) Rohit Sharma
(d) Virat Kohli

Answer: (d)

40. Which team won the Coppa Italia 2021?

(a) Atlanta
(b) AC Milan
(c) Juventus
(d) Napoli

Answer: (c)

Arithmetic Ability

44. How many numbers between 200 and 1500 are divisible by both 3 and 7?

(a) 60
(b) 64
(c) 62
(d) 66

Answer: (c)

45. Which is the lowest four-digit number which when divided by 8, 12 and 15 leaves remainder 7?

(a) 1067
(b) 1037
(c) 1047
(d) 1087

Answer: (d)

46. The average price of 3 items of furniture is Rs. 1200. If their prices are in the ratio 4: 5 : 3, then what is the price of the cheapest item?

(a) 2000
(b) 1500
(c) 1800
(d) 900

Answer: (d)

47. 600 gm of sugar solution has 45 percent sugar in it by weight. How much sugar must be added in the solution to make it 60 percent sugar solution (by weight)?

(a) 225 gm
(b) 200 gm
(c) 250 gm
(d) 180 gm

Answer: (a)

48. The price of wheat reduced by 20 percent. If a family wants to keep their expenses on wheat the same as earlier, the family will have to increase its consumption of wheat by.

(a) 16.66 percent
(b) 25 percent
(c) 30 percent
(d) 20 percent

Answer: (b)

49. An item is marked at Rs.1520 and 25 pe[illegible]nt d[illegible]ount is given on its marked price. If 4 percent loss incurred on selling the item, then what is [illegible]erence between marked price and cost price of the item?

(a) Rs.332.5
(b) Rs.296.5
(c) Rs.304.5
(d) Rs.368.5

Answer: (a)

50. The ratio of 45 percent of 80 percent of A to 30 percent of 40 percent of B is 15 : 4. If the average of A and B is 67.5, what is the value of A - B?

(a) 12
(b) 10
(c) 15
(d) 18

Answer: (c)

51. Two containers A and B contain mixture of Alcohal and water in the ratio of 3 : 2 and 9 : 11 respectively. If 12 liters of mixture from container A and 24 liters of mixture from container B are mixed to form another mixture, then what will be the ratio of Alcohal and water in the resultant mixture?

(a) 2 : 3

(b) 2 : 1

(c) 1 : 1

(d) 1 : 2

Answer: (c)

52. The difference between compound interest and simple interest at 12 percent for 2 years on the same principal amount is Rs. 432. Find the principal amount.

(a) Rs. 25000

(b) Rs. 40000

(c) Rs. 20000

(d) Rs. 30000

Answer: (d)

53. Speed of a bus and a car are in the ratio 2 : 5 respectively. Car covers a distance of 280 km in some time and bus covers a distance of 'd' km less in same time. What is the distance covered by bus?

(a) 112 km

(b) 168 km

(c) 144 km

(d) 132 km

Answer: (a)

54. A motor boat can travel at 10 km/hr in still water. It travelled 91 km downstream in a river a then returned taking altogether 20 hours. Find the rate of flow of the river.

(a) 3 km/hr

(b) 5 km/hr

(c) 6 kin/hr

(d) 8 km/hr

Answer: (a)

56. The area of a rectangle increases by 7 sq. units when its breadth alone is increased by 1 unit. Its area increases by 5 sq. unit when its length alone is increased by 1 unit. Find the perimeter of the original rectangle.

(a) 17 units

(b) 36 units

(c) 18 units

(d) 24 units

Answer: (d)

57. What is the diameter (in cm) of a sphere of surface area 24.64 sq cm?

(a) 1.4

(b) 3.5

(c) 2.8

(d) 2.4

Answer: (c)

General English

61. In the following question, four sentences are given out of which three sentences are grammatically incorrect while one is correct. Find out which sentence is grammatically correct and select the appropriate option.

(a) The Archbishop sought education and knowledge with unwavering zeal.

(b) In his early years, he accidentally stumbled with school in Mwala, Masaku.

(c) Afterwards, he travell abroad for his BA degree in political science and history.

(d) He also treated its parishioners with utmost respect.

Answer: (a)

62. Identify the segment in the sentence which contains the grammatical error from the given options.
Wherever they go Indians easily adapt to the local circumstances.

(a) Wherever they go

(b) Indians easily

(c) adapt to

(d) the local circumstances

Answer: (c)

65. Select the most appropriate option to fill in the blank.
He is one of _____ rare individuals whose wealth and success no one begrudges.

(a) those

(b) these

(c) this

(d) that

Answer: (a)

66. Select the most appropriate option to fill in the blank.
The Indian auto industry was left completely _____ after the Covid crisis hit the nation.

(a) organized

(b) topsy-turvy

(c) classified

(d) wondered

Answer: (b)

67. Rearrange the following sentences in correct order to form a meaningful paragraph. p: One year after the launch of the government scheme while expectations Q: the scheme has hardly reached to those who need it most R: have been increasing about its reach

(a) PQR
(b) PRQ
(c) RQP
(d) RPQ

Answer: (b)

68. Rearrange the following sentences to form a meaningful paragraph.
A: But the rubble was too heavy and I could not move. I started yelling for help.
B: I tried to move the rubble so I can come out and search for my family.
C: It then occurred to me that I was trapped under the debris of my house due to the earthquake that stuck late night.
D: I realized that I was trapped under the rubble.
E: It was just the beginning of dawn when I regained consciousness.

(a) ABCDE
(b) EDCBA
(c) ABCED
(d) EBDCA

Answer: (b)

69. Select the most appropriate synonym of the given word.
CANTANKEROUS

(a) Quarrelsome
(b) Rash
(c) Disrespectful
(d) Obese

Answer: (a)

70. Select the most appropriate antonym of the given word.
COMPREHENSIVE

(a) Inadequate
(b) Indifferent
(c) Superficial
(d) Compressive

Answer: (c)

71. Select the correctly spelt word.

(a) Sqaundered
(b) Squendered
(c) Squandered
(d) Sqeundered

Answer: (c)

72. Select the wrongly spelt word.

(a) Familar

(b) Grammar

(c) Grandeur

(d) Grievous

Answer: (a)

73. Select the most appropriate meaning of the given idiom/ phrase.
Skating on thin ice

(a) If you make another mistake, there will be trouble

(b) To argue the opposite, just for the sake of argument

(c) An event that happens infrequently

(d) To be in a situation that can get quite dangerous or risky

Answer: (d)

74. Select the most appropriate meaning of the given idiom/ phrase.
To have second thoughts

(a) To change a decision

(b) To plan carefully

(c) To take someone

(d) To reconsider

Answer: (d)

75. Select the word which means the same as the g[illegible]p of words given.
One for whom money is the most importan[illegible]ing

(a) Martyr

(b) Masochism

(c) Materialistic

(d) Matinee

Answer: (c)

76. As per passage, in which year did Rabindranath Tagore receive the Nobel prize?

(a) 1941

(b) 1919

(c) 1903

(d) 1913

Answer: (d)

78. Why did Rabindranath Tagore go to East Bengal for 10 years in 1891?

(a) to enjoy the natural beauty of East Bengal so that he could write

(b) to manage his family's estates at Shilaidah and Shazadpur

(c) to spend some time with people of East Bengal

(d) to learn painting from a famous painter of East Bengal

Answer: (b)

79. Which of the following best expresses the opposite meaning to the given word “colloquial”?

(a) informal
(b) vernacular
(c) literary
(d) demotic

Answer: (c)

Discipline1

101. The word 'Science' originates from:

(a) Scientai
(b) Scenti
(c) Scientia
(d) Scientis

Answer: (c)

102. Mark an incorrect match.

(a) Archimedes : Principle of buoyancy; Principle of the lever
(b) James Clerk Maxwell: Electromagnetic theory; Light is an electromagnetic wave
(c) W.K.Roentgen : Ultra short radio waves
(d) Christiaan Huygens : Wave theory of light

Answer: (c)

103. One second is defined as the time required for _____ atom to undergo 9192631770 vibrations between two hyperfine levels of [illegible] state.

(a) Cesium – 133
(b) Francium – 223
(c) Rubidium – 85
(d) Cadmium – 112

Answer: (a)

104. What is the relative strength of strong nuclear force?

(a) 1
(b) 10
(c) 100
(d) 1000

Answer: (a)

105. Who introduced the concept of antiparticle?

(a) Paul Dirac
(b) Carl Anderson
(c) Niels Bohr
(d) Tycho Brahe

Answer: (a)

106. _____ is defined by Newton's first law of motion.

(a) Energy

(b) Work

(c) Inertia

(d) Moment of Inertia

Answer: (c)

107. Which of the following scientific principles does the working of optical fibres depend on?

(a) Thin film optical interference

(b) Total internal reflection of light

(c) Reflection of ultrasonic waves

(d) Photoelectric effect

Answer: (b)

108. Mark the incorrect statement regarding Gravitational force.

(a) The gravitational force is the force of mutual attraction between any two objects by virtue of their masses

(b) It is an universal force

(c) Unlike electromagnetic force, the range of gravitational force is not infinite

(d) All objects on the earth, experience the force of gravity due to the earth.

Answer: (c)

109. Mark the correct relation with respect to the str th of the forces, out of the following -

(a) Electromagnetic force > Gravitational force

(b) Electromagnetic force < Gravitation

(c) Electromagnetic force = Gravitational forc

(d) Can't be determined

Answer: (a)

110. Who had dismissed the possibility of tapping energy from atoms?

(a) Rutherford

(b) Hahn

(c) Meitner

(d) Tesla

Answer: (a)

111. Which of the following works was not performed by Albert Einstein?

(a) Static model of the universe which started modern cosmology

(b) Quantum statistics of a gas of massive bosons

(c) A critical analysis of the foundation of quantum mechanics

(d) A new derivation of Planks law.

Answer: (d)

112. The electric force between two protons is _____ times the gravitational force between them for any fixed distance.

(a) 10 34

(b) 10 36

(c) 10 38

(d) 10 40

Answer: (b)

113. The strong nuclear force is not applicable between -

(a) A proton and a proton

(b) A neutron and a neutron

(c) An electron and a proton

(d) A proton and a neutron

Answer: (c)

114. The distances traversed, during equal intervals of time, by a body falling from rest, stand to one another in the same ratio as the odd numbers beginning with unity [namely, 1: 3: 5: 7.....]." This is known as _____ law of odd numbers.

(a) Galileo's

(b) Bruno's

(c) Newton's

(d) Kepler's

Answer: (a)

115. Which of the following is a scalar quantity?

(a) Total Linear Momentum

(b) Total angular momentum

(c) Force

(d) Energy

Answer: (d)

116. Who correctly predicted in 1931 the existence of a new particle (now called neutrino) emitted in β-decay along with the electron?

(a) Werner Heisenberg

(b) Wolfgang Pauli

(c) Max Born

(d) Niels Bohr

Answer: (b)

117. What is arcminute in radian?

(a) 3.91 × 10 -4 rad

(b) 0.91 × 10 -4 rad

(c) 1.91 × 10 -4 rad

(d) 2.91 × 10 -4 rad

Answer: (d)

118. A tower is observed from two opposite points on the ground. The angle subtended at the tower by the two directions of observation is 1 o 54'.
Given the distance between the two points is about 1.276 m compute the distance of the tower from any of the point. (Use 360 o = 2π rad)

(a) 3.84 X 10 2 m
(b) 0.384 X 10 2 m
(c) 38.4 X 10 2 m
(d) 3.84 X 10 -2 m

Answer: (b)

119. The molecular size of oleic acid is in the order of-

(a) 10 -7 m
(b) 10 -8 m
(c) 10 -9 m
(d) 10 -10 m

Answer: (c)

120. The kelvin, is the fraction _____ of the thermodynamic temperature of the triple point of water.

(a) 1/189.67
(b) 1/176.86
(c) 1/327.26
(d) 1/273.16

Answer: (d)

Discipline2

121. The ratio of the longest and shortest lengths of objects in our universe is about -

(a) 10 39
(b) 10 40
(c) 10 41
(d) 10 42

Answer: (c)

122. Which of the following events has the least time interval?

(a) Period of atomic vibration
(b) Period of x-rays
(c) Period of light wave
(d) Period of radius wave

Answer: (b)

123. Life span of most unstable particle is in the order of _____.

(a) 10 -24 S

(b) 10 -23 S

(c) 10 -22 S

(d) 10 -21 S

Answer: (a)

124. The magnitude of the difference between the individual measurement and the true value of the quantity is called the _____ error of the measurement.

(a) Relative

(b) Percentage

(c) Least count

(d) Absolute

Answer: (d)

125. The potential difference and current is given as (10±0.5)V and (10±0.3)A for an electrical circuit. Find the percentage error in finding the resistance.

(a) 2 percent

(b) 3 percent

(c) 7 percent

(d) 8 percent

Answer: (d)

126. Suppose the period of oscillation of a simple p ulum is 1.62 s, then the digit 2 is known as:

(a) certain

(b) reliable

(c) uncertain

(d) significant

Answer: (c)

127. The dimensional formula of force is-

(a) [M o L T -2]

(b) [M L o T -2]

(c) [M L T o]

(d) [M L T -2]

Answer: (d)

128. Which of the following has no dimension?

(a) Density

(b) Angle

(c) Kinetic energy

(d) Mass density

Answer: (b)

129. Dimensional analysis can be used to check the Dimensional _____ of equations.

(a) Consistency

(b) Inconsistency

(c) Validity

(d) Rigidity

Answer: (a)

134. The advantage of the method of calculus for deriving the equations of motion for constant acceleration is that-

(a) It can be used for motion with non-uniform acceleration also.

(b) It can be used for motion with instant acceleration also.

(c) It can be used for motion with linear acceleration also.

(d) It can be used for motion with effective acceleration also.

Answer: (a)

135. A body is thrown with a velocity of projection 49 ms -1 at an angle of projection 45 o . Find the Range (g = 9.8 ms -2).

(a) 240 m

(b) 245 m

(c) 250 m

(d) 278 m

Answer: (b)

136. It is the time a person takes to observe, think *a* act. It is-

(a) Response time

(b) Effective time

(c) Reaction time

(d) Reduction time

Answer: (c)

138. The direction of null vector _____.

(a) Can be specified

(b) Cannot be specified

(c) Always east

(d) Always west

Answer: (b)

Discipline3

141. Which of the following is not a property of unit vector?

(a) It is present only in a particular axis

(b) It has no dimensions

(c) it is used to specify a direction only

(d) Its magnitude is unit

Answer: (a)

142. Let there be a vector $\bar{A}$ in a plane. Which of the following factors of $\bar{A}$ can't be specified?

(a) Its magnitude is $|\bar{A}|$

(b) The direction θ it makes with the x Axis

(c) Its components A and A x y

(d) Its position

Answer: (d)

144. Who first stated the independency of the horizontal and the vertical component of projectile motion?

(a) Galileo

(b) Newton

(c) Einstein

(d) Edwin Hubble

Answer: (a)

146. What does "Centripetal" mean?

(a) Central

(b) Center seeking

(c) Around the center

(d) Away from center

Answer: (b)

148. Who first gave the view that if a body is moving ,mething external is required to keep it moving?

(a) Aristotle

(b) Democritus

(c) Kanada

(d) Copernicus

Answer: (a)

149. In terms of acceleration, the state of rest and the state of uniform linear motion are-

(a) Opposite

(b) Contradictory

(c) Similar

(d) Equivalent

Answer: (d)

150. Who concluded that the Milky way derived its luminosity because of a large number of stars not visible to the naked eye?

(a) Copernicus

(b) Galileo

(c) Aristotle

(d) Newton

Answer: (b)

151. A high rate of change of momentum will be ensured if there is-

(a) A high change in force

(b) A slow change in force

(c) No change in force

(d) Infinite change in force

Answer: (a)

152. Which is not an important point about the second law of motion?

(a) The second law is obviously consistent with the first law.

(b) The second law of motion is not a vector dependent law.

(c) The second law of motion is applicable to a single point particle.

(d) The second law of motion is a local relation, which means that force at a point in space at a certain instant of time is related to acceleration at that point at that instant.

Answer: (b)

153. Which statement is true for Newton's third law of motion?

(a) The terms action and reaction means nothing but momentum.

(b) The terms action and reaction in the third law may give a wrong impression that action come before reaction.

(c) Action and reaction force act on the same body.

(d) Action and reaction both are cause and effect simultaneously.

Answer: (b)

154. A car moving at 5m/s on a road, takes a turn in a circular road of radius 4m without decreasing the speed. The coefficient of static friction between the wheel and the road is 0.2. What will happen while taking the turn?

(a) The car will slip

(b) The car will not slip

(c) The car moves steadily

(d) The car will roll

Answer: (a)

155. 1 calorie is equal to–

(a) 6.183 J

(b) 5.456 J

(c) 4.186 J

(d) 2.378 J

Answer: (c)

156. For constant force and displacement the value of work done is maximum when the angle between them is-

(a) π rad

(b) π/2 rad

(c) π/3 rad

(d) π/4 rad

Answer: (a)

157. The kinetic energy of 3.5 × 10 -5 kg of rain drop at a terminal speed 9 m/s is about:

(a) 3.5 × 10 3 J

(b) 3.5 × 10 -3 J

(c) 1.2 × 10 -3 J

(d) 1.4 × 10 -3 J

Answer: (d)

158. A toy car is moving with a velocity of 2m/s. Its mass is 1kg. It enters into the rough path and moves from 0.10m to 2.01m. The retarding force (F) on the car in this path is inversely proportional to the path (x) over this range,
x
F = -k/x For 0.1 < x < 2.01m
x
= 0. For x < 0.1 And x > 2.01m
Where k = 0.5 J. Find the final speed of the car.

(a) 2m/s

(b) 1m/s

(c) 4m/s

(d) 3m/s

Answer: (b)

159. Which statement is false for spring constant?

(a) Its unit is Nm

(b) The spring is said to be stiff if K is large

(c) Its unit is N/m

(d) The spring is said to be soft if K is small

Answer: (a)

160. The approximate energy associated with thunderstorms is:

(a) 10 15 J

(b) 10 14 J

(c) 10 13 J

(d) 10 12 J

Answer: (a)

Discipline4

161. The speed of an elevator is 2m/s when it carries a maximum weight of 1800 kg.The opposing force experienced by the elevator is 4000N. What is the minimum power delivered by the motor?

(a) 59hp
(b) 47hp
(c) 57hp
(d) 63hp

Answer: (a)

163. The movement of the axis of the spinning top around the vertical is termed as _____.

(a) Rotation
(b) Oscillation
(c) Spinning
(d) Precession

Answer: (d)

165. The length of an iron bar is 0.7 m and its mass is 4 kg. The bar is supported on two knife edge placed 0.1 m from each end. A load of 6 kg is suspended at 0.3m from one end. What are the reactions at each of the knife edges?

(a) 55N and 21N
(b) 43N and 25N
(c) 55N and 43N
(d) 37N and 63N

Answer: (c)

166. What shall be the moment of inertia of a thin rod of length L along the axis perpendicular to rod at mid point?

(a) ML/12
(b) ML 2 /12
(c) ML 2 /10
(d) ML 2 /14

Answer: (b)

167. Mass of a uniform metal rod is M and length is l. Find the moment of inertia of the rod about an axis perpendicular to it through one end.

(a) Ml 2 /3
(b) Ml 2 /4
(c) Ml 2 /12
(d) Ml 2 /14

Answer: (a)

168. The point where satellite is nearest to the earth is called–

(a) Perigee

(b) Apogee

(c) Perihelion

(d) Aphelion

Answer: (a)

170. The earliest 'geocentric' model in which all celestial objects, stars, the sun and the planets all revolved around the earth, was proposed by _____.

(a) Galileo

(b) Ptolemy

(c) Aristotle

(d) Copernicus

Answer: (b)

172. The escape speed for the moon is _____ times smaller than the earth.

(a) 4

(b) 5

(c) 6

(d) 3

Answer: (b)

173. Suppose a planet has two natural satellites. The period of one natural satellite is 7 hours, 39 minutes and an orbital radius of 9.4 × 10 3 km. Find the mass of the planet.

(a) 5.48 × 10 23 kg

(b) 5.79 × 10 22 kg

(c) 6.79 × 10 22 kg

(d) 6.48 × 10 23 kg

Answer: (d)

174. The mass of a satellite is 400 kg. The satellite is circulating in a circular orbit of radius 2R. Find the energy which is needed to transfer it to another circular orbit of radius 4R. (Given R = 6370 km)

(a) 3.51 × 10 9 J

(b) 3.13 × 10 9 J

(c) 4.23 × 10 9 J

(d) 3.51 × 10 8 J

Answer: (b)

175. The duration of a planet year is 29.5 times the earth year. Find the distance between the planet and the sun if the distance between the sun and the earth is 1.50 × 10 8 km.

(a) 1.43 × 10 10 Km

(b) 1.43 × 10 8 km

(c) 1.43 × 10 12 km

(d) 1.43 × 10 14 km

Answer: (c)

178. A wooden block of mass 5 kg is attached to a spring. It slides without friction over a horizontal rod. The block is displaced from its equilibrium position by 0.1 m and released. Find the maximum speed of the block. (Given spring constant is 500 N/M)

(a) 1 m/s

(b) 2 m/s

(c) 3 m/s

(d) ½ m/s

Answer: (a)

180. The mass of the block attached to the spring is 200g. Its damping constant is 40g/s. If the value of the spring constant is 90 N/m, then find the period of oscillation.

(a) 0.5 S

(b) 0.4 S

(c) 0.3 S

(d) 0.2 S

Answer: (c)

Discipline5

182. Electron Microscope is related to which types of wave?

(a) Electromagnetic wave

(b) Mechanical wave

(c) Matter wave

(d) Radio wave

Answer: (c)

183. Who out of the following is not a famous scientist associated with the physics of wave motion?

(a) Christian Huygens

(b) Robert Hooke

(c) Isaac Newton

(d) Simeon Poisson

Answer: (d)

184. A string of mass 5g is 0.72m long. The string is under a tension of 60N. Find the speed of transverse waves on the string.

(a) 85m/s

(b) 93m/s

(c) 97m/s

(d) 83m/s

Answer: (b)

185. In case of a wave, the points at which the amplitude is the largest are called _____.

(a) Nodes

(b) Antinodes

(c) Fundamentals

(d) Odd harmonics

Answer: (b)

186. Suppose two strings of musical instruments produce beats of frequency 5Hz when playing the same note. If the tension of the second string is slightly increased, then the beat frequency is found to decrease to 3Hz .What is the original frequency of the second string if the frequency of the first string is 427Hz?

(a) 422Hz

(b) 430Hz

(c) 432Hz

(d) 424Hz

Answer: (a)

187. Which harmonic-mode of one end closed pipe of length 20cm is resonantly excited by a 430Hz source when the speed of sound in air is 340m/s?

(a) First Harmonic

(b) Third Harmonic

(c) Fifth Harmonic

(d) Second Harmonic

Answer: (a)

188. A torsion balance is an instrument used t_____.

(a) Measure force between two charged metallic spheres

(b) Measure electrostatic charge present in a body

(c) Measure potential between two charged body

(d) Measure polarity of a charge present in a body

Answer: (a)

189. The electrostatic force exerted by a proton on an electron when they are 1Å apart is

(a) 1.3 × 10 -8 N

(b) 2.3 × 10 -8 N

(c) 2.3 × 10 -10 N

(d) 1.3 × 10 -10 N

Answer: (b)

192. Two charges are located at A and B. The distance between A and B is 14cm. The quantity of charge at A is 4 X 10 -8 C and B is -3 X 10 -8 C. At what point between A and B the electric potential is zero?

(a) 8 cm away from the positive charge on the side of the negative charge.

(b) 8 cm away from the negative charge on the side of the positive charge.

(c) 10 cm away from the positive charge on the side of the negative charge.

(d) In the middle of the two charges.

Answer: (a)

194. What is the dimensional formula for impulse?

(a) M L T

(b) M -1 L -1 T -1

(c) ML -1 T -1

(d) MLT -1

Answer: (d)

197. What is the order of magnitude of magnetic field of human nerve fibre in Tesla?

(a) 10 2

(b) 10 -2

(c) 10 -3

(d) 10 -10

Answer: (d)

198. Suppose an electron is moving in a magnetic fi at speed of 3 × 10 7 m/s, perpendicular to the field. The strength of the magnetic fiel × 4 T. Find the radius of the path (taking mass of electron 9 × 10 -31 kg)

(a) 22 cm.

(b) 26 cm.

(c) 29 cm.

(d) 32 cm.

Answer: (b)

199. A coil is wounded tightly. The coil has 100 turns and its radius is 10 cm. It carries a current of 1A. Find the magnitude of the magnetic field at the centre of the coil.

(a) 6.28 × 10 -4 T

(b) 6.28 × 10 -3 T

(c) 6.24 × 10 -2 T

(d) 6.11 × 10 -3 T

Answer: (a)

200. Nano physics is study of particle with at least one dimension between 1 and _____ nanometres.

(a) 100
(b) 10
(c) 1000
(d) 10000

Answer: (a)

Discipline6

201. Which of the following is not an approach to make nano materials-

(a) top-down
(b) bottom up
(c) middle up down
(d) top down and bottom up

Answer: (c)

202. Fe, Co, Ni are ferromagnetic in bulk state but in nano phase they change to-

(a) paramagnetic
(b) superparamagnetic
(c) non magnetic
(d) diamagnetic

Answer: (b)

203. Moore's law states that amount of space requi to install a transistor on a chip shrinks by roughly every _____ months.

(a) 12
(b) 18
(c) 24
(d) 30

Answer: (c)

204. Metals in nanophase absorbs:

(a) helium
(b) hydrogen
(c) carbon
(d) lithium

Answer: (b)

205. As the size of nanoparticle decreases electrical conductivity _____.

(a) increases
(b) decreases
(c) Stays the same
(d) can't predict

Answer: (b)

206. Nanomaterials may have ____ melting point or phase transition temperature as compared to bulk material.

(a) higher

(b) lower

(c) same

(d) infinite

Answer: (b)

207. Which of the following statements is not correct about Coulomb's Law?

(a) Coulomb's Law states that the force between two-point charges Q1and Q2 is inversely proportional to the product of the charges and directly proportional to the square of the distance between them.

(b) Point charge is a hypothetical charge located at a single point in space. It is an idealized model of a particle having an electric charge.

(c) The electric field intensity or the electric field strength at a point is defined as the force per unit charge.

(d) When we have a number of point charges, to determine the force on a particular charge due to all other charges, we apply principle of superposition.

Answer: (a)

208. Divergence theorem states that the volume integral of the divergence of vector field is equal to the net outward flux of the vector through the closed surface that bounds the _____.

(a) Area

(b) Density

(c) Inner Surface

(d) Volume

Answer: (d)

209. Which theorem states that "the surface integral of the curl of a function over a surface bounded by a closed surface is equal to the line integral of the particular vector function around that surface".

(a) Divergence Theorem

(b) Stokes Theorem

(c) Gauss Law

(d) Electric Curl Law

Answer: (b)

210. The maximum electric field that a dielectric medium can withstand without break-down (of its insulating property) is called its _____.

(a) dielectric strength

(b) dielectric breakdown

(c) Uniaxial strength

(d) Biaxial breakdown

Answer: (a)

211. Nuclear masses are measured in _____.

(a) atomic mass unit

(b) grams

(c) moles

(d) electron volt

Answer: (a)

212. Which of the following is incorrect?

(a) In Gamma decay the energy (MeV) corresponds to radiation of extremely short wavelength, shorter than the hard X-ray region

(b) Typically, a gamma ray is emitted when a α or β decay results in a daughter nucleus in an excited state.

(c) In beta decay, a nucleus spontaneously emits an electron or a positron

(d) While a free neutron decays to proton, the decay of proton to neutron is not possible inside the nucleus

Answer: (d)

213. Energy is released by _____ of nuclei.

(a) fusion only

(b) fission only

(c) both fission and fusion

(d) Can't be determined

Answer: (c)

214. Mediating particles that can exist only because of the uncertainty principle for energy are called _____.

(a) permanent particle

(b) virtual particle

(c) temporary particle

(d) real particle

Answer: (b)

215. There are thought to be _____ types of quarks.

(a) five

(b) six

(c) seven

(d) eight

Answer: (b)

216. Strongly interacting particles are called _____.

(a) hadrons

(b) fermions

(c) mesons

(d) bosons

Answer: (a)

217. The interaction between quarks is mediated by _____.

(a) bosons
(b) mesons
(c) gluons
(d) fermions

Answer: (c)

218. Proton consists of _____ number of quarks.

(a) three
(b) four
(c) two
(d) five

Answer: (a)

219. Which of the following is not a lepton?

(a) electron
(b) tau particle
(c) muon
(d) proton

Answer: (d)

220. Fermions have _____ integer spin.

(a) half
(b) one
(c) two third
(d) one third

Answer: (a)

Discipline7

221. What is the rest mass of a photon in free space?

(a) zero
(b) same as mass of electron
(c) same as mass of proton
(d) negative

Answer: (a)

222. Which of the following statements is not true?

(a) If the net external force acting on a body or a system of particles is zero, the linear momentum of the system is conserved

(b) If a Force (F) acts on the system for a given time, it produces a change in the momentum of the system, equal to its impulse

(c) The relativistic total energy of a particle is the sum of its Relativistic-Kinetic-Energy and Rest-Mass energy

(d) For a particle of Relativistic-mass, such as Photon, the relativistic – energy-momentum relation becomes e = pc

Answer: (d)

223. Which of the following scientists established the evidence of radioactivity in elements like Thorium, Polonium and Radium as well and that radioactivity is a nuclear property of the element concerned and remains unaffected by physical or chemical changes?

(a) Rutherford

(b) P. Villars

(c) Becquerel

(d) Madame Marie Curie

Answer: (d)

224. Which of the following statements is not true?

(a) The penetrating power of Beta rays is more tha hat of both Alpha rays and Gamma rays

(b) Gamma rays are electrically neutral

(c) Alpha rays are positively charged particles a Beta rays are negatively charged particles

(d) Alpha particles affect photographic s

Answer: (a)

225. The SI unit of Radioactivity is Rutherford. It is defined as the quantity of any radioactive substance giving _____ disintegrations per second.

(a) 10 6

(b) 10 7

(c) 10 5

(d) 10 8

Answer: (a)

226. A fission chain reaction is said to be self-sustained-

(a) When the rate of production of electrons is equal to the rate of loss of electrons

(b) When the rate of production of neutrons is equal to the rate of loss of neutrons

(c) When the rate of production of neutrons is more than the rate of loss of electrons

(d) When the rate of production of neutrons is less than the rate of loss of electrons

Answer: (b)

228. _____ effect is the effect of splitting of a spectral line into several components in the presence of a static magnetic field.

(a) zeeman
(b) stark
(c) roger
(d) malone

Answer: (a)

229. Which of the following is not a quantum number?

(a) Principal quantum number
(b) magnetic quantum number
(c) spin quantum number
(d) electric quantum number

Answer: (d)

230. In the _____ model, electrons move in circular orbits like Newtonian particles in hydrogen atom.

(a) Bohr's
(b) Zeeman's
(c) Einstein's
(d) Bose's

Answer: (a)

232. _____ is the shortest wavelength in Balmer se s.

(a) 364.6 nm
(b) 365.6 nm
(c) 366.6 nm
(d) 367.6 nm

Answer: (a)

233. Which of the following is a correct value of Planck's constant?

(a) 6.2 × 10 -33 Js
(b) 6.3 × 10 -32 Js
(c) 6.6 × 10 -34 Js
(d) 6.8 × 10 -35 Js

Answer: (c)

234. Choose the correct relation between Joules and Volt.

(a) 1J = 62.5 × 10 18 ev
(b) 1J = 62.5 × 10 19 ev
(c) 1J = 6.25 × 10 -19 ev
(d) 1J = 6.25 × 10 18 ev

Answer: (d)

235. Which of the following is the correct value of Rydberg constant obtained from the empirical Balmer formula?

(a) 1.097 × 10 7 /m

(b) 1.08 × 10 7 /m

(c) 1.039 × 10 7 /m

(d) 1.03 × 10 7 /m

Answer: (a)

237. The relation between curie and becquerel (Both the unit of radioactive decay rate) is-

(a) 1 curie = 3.6 × 10 10 Bq

(b) 1 curie = 3.7 × 10 10 Bq

(c) 2 curie = 3.8 × 10 10 Bq

(d) 1 curie = 3.9 × 10 10 Bq

Answer: (b)

Discipline8

241. _____ is an example of organic polymer semiconductor.

(a) Polythiophene

(b) Anthracene

(c) Doped phthalocyanines

(d) Indium phosphide

Answer: (a)

242. The minimum energy required in Silic se ate an electron at room temperature from the atom is approximately-

(a) 0.01ev

(b) 0.03ev

(c) 0.04ev

(d) 0.05ev

Answer: (d)

243. The threshold voltage for germanium diode is approximately_____.

(a) 0.1 V

(b) 0.2 V

(c) 0.3 V

(d) 0. 4 V

Answer: (b)

244. The semiconductor used for fabrication of visible LEDs must at least have a band gap of _____.

(a) 1.5ev

(b) 1.6 ev

(c) 1.7 ev

(d) 1.8 ev

Answer: (d)

245. The actual relation between atomic mass unit (u) and kilogram is:

(a) 1u = 1.630512 × 10 -27 kg

(b) 1u = 1.660539 × 10 -27 kg

(c) 1u = 1.600512 × 10 -27 kg

(d) 1u = 1.530512 × 10 -27 kg

Answer: (b)

246. The correct value of mass of proton in kilogram is _____.

(a) 1.60262 × 10 -27 kg

(b) 1.60262 × 10 -28 kg

(c) 1.67262 × 10 -27 kg

(d) 1.67262 × 10 -25 kg

Answer: (c)

247. Let there be a physical quantity X = abc. If percent error in a, b and c are 1 percent, 2 percent and 4 percent respectively, then the percent of error in X is:

(a) 7 percent

(b) 8 percent

(c) 3 percent

(d) 10 percent

Answer: (a)

248. Which is not a scalar quantity?

(a) Time

(b) Momentum

(c) Volume

(d) Density

Answer: (b)

249. Which of the following pairs of physical quantities don't have the same dimensional formulas?

(a) Work and torque

(b) Angular momentum and Planck’s constant

(c) Tension and surface tension

(d) Impulse and linear momentum

Answer: (c)

251. Which of the following is obtained if we calculate the area under the force-displacement graph?

(a) Impulse

(b) Momentum

(c) Work done

(d) Torque

Answer: (c)

252. A steel wire 0.361 m long has a mass of 9.0 × 10 -3 kg. If the wire is under a tension of 25 N, what is the speed of transverse waves on the wire?

(a) 31.67 ms -1

(b) 42.54 ms -1

(c) 16.63 ms -1

(d) 27.87 ms -1

Answer: (a)

254. Two wires of copper having the length in the ratio 9:1 and their radius in the ratio 1:7, are stretched by the same force. The ratio of longitudinal strain in the two will be -

(a) 1:16

(b) 81:1

(c) 49:1

(d) 1:63

Answer: (c)

256. Light of wavelength 4000 Å is incident at small angle on a prism of apex angle 8 o . The prism has n = 4.6 and n = 3.4. The angle of dispersion v r
produced by the prism in this light is-

(a) 9.6 o

(b) 0.08 o

(c) 0.192 o

(d) 0.172 o

Answer: (a)

257. What will be the reaction when two soap . s of different radii are in communication with each other?

(a) Air flows from larger bubble into the smaller one

(b) The size of the bubbles remains the same

(c) Air flows from the smaller bubble into the large one and the large bubble grows at the expense of the smaller one

(d) The air flows from the larger bubble

Answer: (c)

258. Which is the example of centrifugal force?

(a) A body tied to one end of a string is being rotated in a circle; the force is supplied by the tension of the string.

(b) The moon revolving around the earth, the force is the gravitational pull of the earth on the moon.

(c) A person riding a cycle along a circular path, the necessary force is supplied by a sidewise pressure exerted by the road on the tyres.

(d) A stone tied to one end of a string is being rotated in a circle, the stone itself exerts an equal and opposite force on the hand holding the string.

Answer: (d)

260. Choose the most elastic material-

(a) Iron

(b) Copper

(c) Glass

(d) Wooden

Answer: (a)

Discipline9

261. Electric capacity of a semiconductor _____ with increase in temperature.

(a) Increases

(b) Decreases

(c) Remains same

(d) First increases and then decreases

Answer: (a)

263. Waves that are useful for communication purpose are _____.

(a) Ultraviolet

(b) Infrared

(c) Micro waves

(d) Visible light

Answer: (c)

264. What is the unit of Self Induction?

(a) Henry

(b) Farad

(c) Weber

(d) Tesla

Answer: (a)

265. What will be the force experienced by an α particle moving parallel to magnetic field?

(a) 12 Newton

(b) 0.2 Newton

(c) Zero Newton

(d) 0.8 newton

Answer: (c)

266. If we need to find out 3μF capacity, the arrangement of three 2μF capacitor will:

(a) All three in series

(b) All three in parallel

(c) Two capacitors in series and third in parallel with the combination of first two capacitors

(d) Two capacitor is in parallel and third is in series of first two combination

Answer: (c)

267. Two spherical shells of iron material of radius r and 4r carry charges -q and 5q respectively. What is the quantity of charge that will flow into the Earth if the inner shell is grounded?

(a) q/2
(b) q/4
(c) q/3
(d) q/5

Answer: (b)

268. Suppose the force is f which is acted in a charge situated on the axis of a dipole. Now the charge is shifted to double the distance . So the force will be:

(a) f/8
(b) f/5
(c) f/3
(d) f/9

Answer: (a)

270. The radius of hollow metal sphere is 5 cm and the potential on its surface is 10 volts when charged. What is the value of the electric field at the center of the metal sphere?

(a) 3 Volt/meter
(b) 7 Volt/meter
(c) 15 Volt/meter
(d) 0 Volt/meter

Answer: (d)

271. The diameters of molecules of Hydroc chl e and nitrogen are respectively 2.5 Å, 4.2Å and 3.4Å. Compare their thermal conductivit y temperature and pressure.

(a) 1 : 2.23 : 1.91
(b) 2 : 2.13 : 3.12
(c) 0.226 : 0.477 : 0.4577
(d) 1 : 3.21 : 2.19

Answer: (c)

272. An X-ray machine produces X-rays of wave length 0.1Å. Its accelerating voltage is:

(a) 120.5 KV
(b) 230.4 KV
(c) 212.3 KV
(d) 123.75 KV

Answer: (d)

274. In a coil of self inductance 5mH the current rises from 0 to 1Å in 0.1s at a uniform rate. The magnitude of emf. Induced is:

(a) 0.5V

(b) 0.05V

(c) 0.07V

(d) 0.4V

Answer: (b)

275. The radiations of minimum wavelength in the electromagnetic spectrum is:

(a) radio wave

(b) beta-rays

(c) X-rays

(d) gamma rays

Answer: (d)

276. If a wave is incident obliquely on the boundary between two different media the transmitted wave is called _____.

(a) Refracted wave

(b) Standing Wave

(c) Electromagnetic Wave

(d) Radial Wave

Answer: (a)

277. A train that can move at almost the speed of lig s going at speed of 0.99c with respect to ground. The length of the train measured w n it w not moving was 100m. Now a woman tries to measure the length of the train, what will it be

(a) 14 m

(b) 10 m

(c) 18 m

(d) 24 m

Answer: (a)

278. Which of the following option is correct of the given option:
The two basic postulates of the special theory of relativity are as follows:
[x] The laws of physics must be the same for all observers moving at constant velocity with respect to one another.
[y] The speed of light must be the same for all inertial observers, independent of their relative motion.

(a) x is correct but y is wrong

(b) y is correct and x is wrong

(c) both are correct

(d) both x and y are wrong

Answer: (c)

279. Clocks in motion relative to an observer appear to be slowed down by a factor .This is known as _____.

(a) Time hastening

(b) Time dilation

(c) Time static

(d) Time pausing

Answer: (b)

280. Fill in the blanks
The conservation of mass–energy law requires that the sum of the mass–energy of a system of particles before interaction must _____ the sum of the mass–energy of the system after interaction.

(a) Be greater than

(b) Be lesser than

(c) Not be equal to

(d) Be equal to

Answer: (d)

Teaching Methodology

281. Science has certain characteristics who distinguish it from other spheres of human endeavour. These characteristics define the nature of science except one of the following. This is

(a) Science is a particular way of looking at nature

(b) Science is a narrow body of knowledge

(c) Science is an interdisciplinary area of learnir

(d) Science is always tentative

Answer: (b)

282. Most investigations in science involves some form of scientific method. Which one of the following is not an element of scientific method?

(a) Observations

(b) Hypothesis

(c) Testing without prediction

(d) Scientific theory

Answer: (c)

283. Educational aims are framed in accordance with our socio economic and sociocultural needs. Which of the following is not one of the aims of Teaching-learning science?

(a) To deliver a scientific temper, attitude and honesty

(b) To develop an artistic bent of mind

(c) To acquire the requisite theoretical knowledge and practical technological skills to enter the world of work

(d) To nurture the natural curiosity, aesthetic sense and creativity in science and technology

Answer: (b)

284. Who consolidated his theories in his book “New System of Chemical Philosophy”?

(a) Isaac Newton

(b) John Dalton

(c) J C Bose

(d) Niels Bohr

Answer: (b)

285. _____ is a plasma physicist who initiated and founded the Plasma Science Society of India

(a) Bimla Buti

(b) Venkatraman Radhakrishnan

(c) Chandrasekhara Venkata Rahman

(d) JC Bose

Answer: (a)

286. The teacher plays an important role for nurturing creativity in learners. Which of the following is not an important role?

(a) Assist students in developing models of inquiry and discovery

(b) Guide students in the use of some type of approach

(c) Recognise and appreciate creative ideas and products of students

(d) Provide reach variety of learning experiences to the students

Answer: (b)

287. Which of the following skills must a Physics teacher have?

(a) Skill of closure

(b) Skill of talking extempore on other subjects

(c) Skill of contradicting established formulaes

(d) Skill of making the students afraid of him/herself

Answer: (a)

288. Sum up the role of the teacher in promoting Argumentation except which of the following

(a) provide an open ended situation open in this to the learners to initiate argument

(b) Ensure nonhomogeneous participation of learners in argumentation

(c) Provide positive feedback to the learners

(d) Help the learners to summarise the major ideas evolved In argumentation at the end

Answer: (b)

289. Which one of the following is the correct age range given by Peaget's Stage Dependent Theory

(a) The sensory motor stage - 0 to 3 years

(b) The pre operational stage - 4 to 6 years

(c) The concrete stage - 7 to 11 years

(d) The formal stage - 12 to 16 years

Answer: (c)

290. What should be the roles of teachers and learners in the Teacher-centred Approaches of Education?

(a) Learner acts and teacher facilitates learning

(b) Teacher is active and learner is passive

(c) Teacher makes teaching learner active

(d) Both teacher and learners are passive

Answer: (b)

291. Which one of the following is not a constructive teaching model?

(a) Nussbaum and Novick Model (1982)

(b) Niedderer Model (1987)

(c) Model proposed by Wittrock (1994)

(d) 7 F Model (1997)

Answer: (d)

292. According to Black and McClintock (1995), the Interpretation Construction (ICON) Model of teaching –learning consists of _____ steps

(a) 05

(b) 07

(c) 09

(d) 11

Answer: (b)

293. Which of the following is not a phase of 5Es m el of teaching-learning in school?

(a) Ensure

(b) Engage

(c) Explore

(d) Explain

Answer: (a)

294. Which one of the following is not an efficient role of a teacher in problem solving approach?

(a) Teacher's role is to facilitate students to define the problem

(b) Teacher's role is to encourage students to plan their method of problem solving

(c) Teacher's role is to encourage the group that has completed the task at the earliest to extend help to the group struggling with the problem, so that they can do it within the given time frame

(d) Teacher's role is to explain the ideas on the problem which is not solved

Answer: (d)

295. In which of the following teaching methods does the student acquire the knowledge himself by discovering the facts himself?

(a) Tutorial method

(b) Demonstration method

(c) Heuristic method

(d) Discussion method

Answer: (c)

296. Analogy is a process of identifying similarities between two concepts. Which one of the following is not a step of teaching with analogies model?

(a) Introduce the information

(b) Review the analogue concept

(c) Indentify relevant features of the target and analogue

(d) Map similarities

Answer: (a)

297. A science teacher needs to have good communication skills for effective teaching-learning of science. Which one is not a quality of an effective science communicator?

(a) The communicator should use hard language

(b) The communicator should understand well whatever he/she wants to communicate

(c) The communicator should believe in two way interactive communication

(d) The communicator should know his /her students well and should be sensitive towards their needs and concerns

Answer: (a)

298. Which one of the following is incorrect?

(a) Language teaching needs to be multilingual

(b) It is imperative that we honour the child's home language(s)

(c) The three-language formula needs to be implemented in its spirit

(d) There should be no study of classical and fore languages at any stage

Answer: (d)

300. Which one of the following precautior me res is related to electrical hazards ?

(a) All the chemical should be adequately l d

(b) Careful supervision is required in the use of corrosive substance

(c) Special care must be taken in some of the experiments such as benzene should be replaced by methylbenzene, wherever possible

(d) Equipment should carry a distinctive on/off light

Answer: (d)

Answer key

Answer key from the Delhi Subordinate Services Selection Board's official answer key for this sitting. "—" means the key gave none.

Mental Ability

1	**(a)**	2	**(b)**	3	**(d)**	4	**(c)**	5	**(d)**	6	**(a)**	7	**(d)**	8	**(a)**
9	**(a)**	10	**(c)**	11	**(c)**	12	**(c)**	13	**(b)**	16	**(b)**				

General Awareness

21	**(d)**	22	**(d)**	23	**(b)**	24	**(c)**	25	**(d)**	26	**(a)**	27	**(c)**	28	**(d)**
29	**(b)**	30	**(c)**	31	**(a)**	32	**(b)**	33	**(c)**	34	**(b)**	35	**(a)**	36	**(c)**
37	**(c)**	38	**(d)**	39	**(d)**	40	**(c)**								

Arithmetic Ability

44	**(c)**	45	**(d)**	46	**(d)**	47	**(a)**	48	**(b)**	49	**(a)**	50	**(c)**	51	**(c)**
52	**(d)**	53	**(a)**	54	**(a)**	56	**(d)**	57	**(c)**						

General English

61	**(a)**	62	**(c)**	65	**(a)**	66	**(b)**	67	**(b)**	68	**(b)**	69	**(a)**	70	**(c)**
71	**(c)**	72	**(a)**	73	**(d)**	74	**(d)**	75	**(c)**	76	**(d)**	78	**(b)**	79	**(c)**

Discipline1

101	**(c)**	102	**(c)**	103	**(a)**	104	**(a)**	[illegible]	**(a)**	106	**(c)**	107	**(b)**	108	**(c)**
109	**(a)**	110	**(a)**	111	**(d)**	112	[illegible]	3	**(c)**	114	**(a)**	115	**(d)**	116	**(b)**
117	**(d)**	118	**(b)**	119	**(c)**	120	**(d)**								

Discipline2

121	**(c)**	122	**(b)**	123	**(a)**	124	**(d)**	125	**(d)**	126	**(c)**	127	**(d)**	128	**(b)**
129	**(a)**	134	**(a)**	135	**(b)**	136	**(c)**	138	**(b)**						

Discipline3

141	**(a)**	142	**(d)**	144	**(a)**	146	**(b)**	148	**(a)**	149	**(d)**	150	**(b)**	151	**(a)**
152	**(b)**	153	**(b)**	154	**(a)**	155	**(c)**	156	**(a)**	157	**(d)**	158	**(b)**	159	**(a)**
160	**(a)**														

Discipline4

161	**(a)**	163	**(d)**	165	**(c)**	166	**(b)**	167	**(a)**	168	**(a)**	170	**(b)**	172	**(b)**
173	**(d)**	174	**(b)**	175	**(c)**	178	**(a)**	180	**(c)**						

Discipline5

182	**(c)**	183	**(d)**	184	**(b)**	185	**(b)**	186	**(a)**	187	**(a)**	188	**(a)**	189	**(b)**
192	**(a)**	194	**(d)**	197	**(d)**	198	**(b)**	199	**(a)**	200	**(a)**				

Discipline6

201 **(c)**	202 **(b)**	203 **(c)**	204 **(b)**	205 **(b)**	206 **(b)**	207 **(a)**	208 **(d)**		
209 **(b)**	210 **(a)**	211 **(a)**	212 **(d)**	213 **(c)**	214 **(b)**	215 **(b)**	216 **(a)**		
217 **(c)**	218 **(a)**	219 **(d)**	220 **(a)**						

Discipline7

221 **(a)**	222 **(d)**	223 **(d)**	224 **(a)**	225 **(a)**	226 **(b)**	228 **(a)**	229 **(d)**		
230 **(a)**	232 **(a)**	233 **(c)**	234 **(d)**	235 **(a)**	237 **(b)**				

Discipline8

241 **(a)**	242 **(d)**	243 **(b)**	244 **(d)**	245 **(b)**	246 **(c)**	247 **(a)**	248 **(b)**		
249 **(c)**	251 **(c)**	252 **(a)**	254 **(c)**	256 **(a)**	257 **(c)**	258 **(d)**	260 **(a)**		

Discipline9

261 **(a)**	263 **(c)**	264 **(a)**	265 **(c)**	266 **(c)**	267 **(b)**	268 **(a)**	270 **(d)**		
271 **(c)**	272 **(d)**	274 **(b)**	275 **(d)**	276 **(a)**	277 **(a)**	278 **(c)**	279 **(b)**		
280 **(d)**									

Teaching Methodology

281 **(b)**	282 **(c)**	283 **(b)**	284 **(b)**	28 **(a)**	286 **(b)**	287 **(a)**	288 **(b)**		
289 **(c)**	290 **(b)**	291 **(d)**	292 **(b)**	2 **(a)**	294 **(d)**	295 **(c)**	296 **(a)**		
297 **(a)**	298 **(d)**	300 **(d)**							