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अंडमान तथा निकोबार प्रशासन

ANDAMAN AND NICOBAR ADMINISTRATION

शिक्षा निदेशालय / **DIRECTORATE OF EDUCATION**

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Port Blair, Dated the 25th day of July, 2024

NOTICE

Sub: Publication of Answer Key inviting claims & objections-reg:

The answer key of question paper of written test held on 21-07-2024 for consideration of Departmental promotion to the post of Laboratory Assistant in the Department of Education is hereby published inviting claims and objections.

Claims and objections (if any) Addressed to the Director (Education), Directorate of Education, VIP Road, Port Blair shall reach the Academic & Recruitment cell of the Directorate of Education by 1500 hours of Saturday the 27th day of July, 2024. Submission scan also be made on the email ID- recruitment.anieducation@gmail.com. No submission shall be entertained on expiry of aforesaid schedule.

Annexures-

I- Question Paper of the written test held on 21-07-2024 for consideration of Departmental promotion to the post of Laboratory Assistant in the Department of Education.

II- Answer Key of the Question paper mentioned at Sl. No-I

Deputy Director Education (Perl)

Copy to- PA to Director (Education) for kind information to DE please.

25/7/24

Deputy Director Education (Perl)

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MCQ paper for screening of Departmental candidates for consideration of promotion to the post of Laboratory Assistant

SET-I

PHYSICS

1. For conduction of a *p-n* junction diode, the biasing is
   a. High potential on *n*-side and low potential on *p*-side
   b. High potential on *p*-side and low potential on *n* -side
   c. Same potential on *p* and *n* sides
   d. Undetermined.

2. To use transistor as an amplifier :
   a. Both the junctions are forward biased
   b. Both the junctions are reverse biased
   c. The emitter –base junction is forward biased and base –collector junction is reverse biased
   d. No biasing voltage is required.

3. Number of electrons removed from a conductor, so that it acquires a charge of 3.5 *nC*
   a 3.18×10^{10} b 2.18×10^{10}
   c 4.18×10^{11} d 5.18×10^{9}

4. Two fixed point charges 4Q and 2Q are separated by a distance x, then the third point charge q be placed for it to be in equilibrium
   a $r = 0.58\,x$ or $3.41x$ b $r = 0.68\,x$ or $4.41x$
   c $r = 0.78\,x$ or $3.41x$ d $r = 0.58\,x$ or $5.41x$

5. If 100 joules of work must be done to remove electric charge equal to 4 C from a place , where potential is -10 volt to another place, where potential V volt is
   a 25 volt b -65 volt
   c -50 volt d 15 volt

6. If the electric field is given by $6\hat{\imath} + 3\hat{\jmath} + 4\hat{k}$, the electric flux through a surface of area 20 units lying in YZ- plane.
   a 130 unit b 140 units
   c 120 units d 125 units

7. If the number of electric lines of forces emerging out of a closed surface are $10^{3,}$ The charges enclosed :
   a 8.85×10^{-8} C b 8.85×10^{-9} C
   c 8.85×10^{-7} C d 8.85×10^{-10} C

8. A generator is supplying power to a Physics lab by a cable of resistance $20\,\Omega$. If the generator is generating 50 kW power 5000 volt , the power received by the factory is
   a 2 0 kW b 200 kW
   c 2 kW d 2 000 kW

9. The emf of a cell is 1.5 V. On connecting a 14 Ω resistance across the cell, the terminal potential difference falls to 1.4 V. The internal resistance of the cell:

a $3\,\Omega$ b $2\,\Omega$
c $5\,\Omega$ d $1\,\Omega$

10. A wire of resistance 1 ohm is stretched to double its length , then the new resistance is

a $5\,\Omega$ b $4\,\Omega$
c $10\,\Omega$ d $20\,\Omega$

11. The magnetic field at a distance of 5 m from an infinite strait conductor carrying a current of 100 A is

a 4.0×10^{5} T b 14×10^{-4} T
c 41×10^{-5} T d 4×10^{-6} T

12. A long strait wire carrying current of 4 A due to a parallel wire carrying 6 A current at a distance of 3 cm , then the force per unit length is :

a 61.6×10^{-4} Nm^{-1} b 16×10^{-4} Nm^{-1}
c 1.6×10^{-4} Nm^{-1} d 2.6×10^{-4} Nm^{-1}

13. Torque act as on a 40 turn coil of 100 cm^2 area carrying a current of 10 A held with its axis at right angle to magnetic field of flux density 0.2 tesla is :

a 0.8 Nm b 8.0 Nm
c 9.1 Nm d 1.9 Nm

14. The coil of galvanometer has a resistance of 100. It gives full scale deflection for a current of 5×10^{-4} A. The galvanometer can be converted to voltmeter of range 5 V by:

a R = 9000 Ω b R = 9100 Ω
c R = 9800 Ω d R = 9900 Ω

15. The magnetic flux through a coil perpendicular to it plane is varying according to the relation $\phi = (5t^3 + 4t^2 + 2t - 5)$ weber, the induced emf at t = 2 sec is

a e = + 78 V b e = - 78 V
c e = + 87 V d e = - 87 V

16. Magnetic flux of 5 μWb is linked with a coil, when a current of 1 mA flows through it. The self-induction of the coil is

a 3.7 mH b 5.5 mH
c 5.0 mH d 5.7 mH

17. The instantaneous current from an AC source is **I = 6 sin 314 t,** the rms value of the current is:

a $3\sqrt{2}$ A b $2\sqrt{3}$ A
c $2\sqrt{5}$ A d $5\sqrt{3}$ A

18. The impedance of an LCR circuit in AC is given by

a $\sqrt{R^2 + (Xl - Xc)^2}$ b $\sqrt{R^2 + (Xc + Xl)^2}$
c $\sqrt{R^2 - (Xc - Xl)^2}$ d $\sqrt{R^2 + (Xc - Xl)^2}$

19. Ozone layer blocks the radiation of wavelength

a Less than 3×10^{-7} m b Equal to 3×10^{-7} m
c More than 3×10^{-7} m d None of these

20. Two lenses of powers -1.5 and + 2.75 D are kept in contact. The focal length of the combination is

a 0.6 m
b 0.5 m
c 0.8 m
d 0.9 m

21. The De-Broglie wavelength of an electron beam accelerated through a potential of 100 V is

a $\lambda = 21.2$ Å
b $\lambda = 2.12$Å
c $\lambda = 22.1$ Å
d $\lambda = 1.22$ Å

22. The radius of the nucleus of Hydrogen atom, when $R_0 = 1.1 \times 10^{-15}$ m

a 0.11×10^{-15} m
b 1.1×10^{-15} m
c 1.1×10^{-10} m
d 11.1×10^{-15} m

23. The sequence of stepwise decay of radioactive nucleus is

$$D_1 \xrightarrow{\beta} D_2 \xrightarrow{\alpha} D_3 \xrightarrow{\alpha} D_4$$

If the nucleon number and atomic number of D_4 are 172 and 69, then the nucleon number and atomic number of D_1 are:

a 180, 72
b 180, 73
c 176, 71
d 184, 75

24. Two railway tracks are parallel to west-east direction. Train **A** moves with a speed of 30 ms^{-1} from west to east, while train **B** moves with a speed of 48 ms^{-1} from east to west. The relative speed of train **B** w.r.t. train **A** is

a +78 ms^{-1}
b -78 ms^{-1}
c -87 ms^{-1}
d +87 ms^{-1}

25. The resultant of two forces , one 6 N due east and other 8 N due north:

a 10 N
b 15 N
c 11 N
d 14 N

26. The force of 20 N is inclined at 30° to the X-axis , its **X** and **Y** components are

a $3\sqrt{10}$ N, 10 N
b $4\sqrt{3}$ N, 10 N
c $10\sqrt{3}$ N , 10 N
d $3\sqrt{5}$ N, 10 N

27. A cricket ball of mass 500 g is moving with a speed of 36 kmh^{-1}. It is reflected back with the same speed. The impulse applied on it is :

a 10 $kgms^{-1}$
b 12 $kgms^{-1}$
c 09 $kgms^{-1}$
d 24 $kgms^{-1}$

28. A heavy load of mass 600 kg is placed in the a lift, the weight of the load in a lift when the lift moves upwards with the an acceleration of 2.2 ms^{-2} .

a 2700 N
b 7002 N
c 2070 N
d 7200 N

29. A man of mass 60 kg runs up a flight of 30 steps in 60 seconds . If each step is 20 cm high , g=10 ms^{-2} then the power of the man is :

a 30 W
b 60 W
c 120 W
d 100 W

30. The source of temperature of a Carnot's engine is 127°C . It takes 400 cal of heat from the source and rejects 300 cal to the sink during each cycle , the temperature of the sink is :

a 350 K
b 320 K
c 300 K
d 330 K

31. The first law of thermodynamics confirms the law of

a Conservation of momentum of molecules
b Conservation of Energy
c Flow of heat in a particular direction
d Conservation of heat energy and mechanical energy

32. In a thermo dynamical system, If ΔU represents the increase in its internal energy and W, the work done by the system then the correct statement is :

a ΔU = - W in an isothermal process
b ΔU = W in an isothermal process
c ΔU = - W in an adiabatic process
d ΔU = W in an adiabatic process

33. A body starts from rest and acquires a velocity of 12 ms^{-1}, the acceleration is

A - 2.4 ms^{-2}
B - 4.2 ms^{-2}
c + 4.2 ms^{-2}
d + 2.4 ms^{-2}

34. Two identical springs , one of the spring factor is k_1 and the other is k_2 are first connected in series and then in parallel, then the time periods are

a $T=2\pi\sqrt{2m/3k}$, $T= 2\pi\sqrt{2m/k}$
b $T=2\pi\sqrt{m/2k}$, $T= 2\pi\sqrt{2m/k}$
c $T=2\pi\sqrt{m/3k}$, $T= 2\pi\sqrt{m/k}$
d $T=2\pi\sqrt{m/k}$, $T= 2\pi\sqrt{m/k}$

35. A particle executes S.H.M. given by x = 0.24 cos (400t - 0.5). The frequency of the oscillation is:

a $\gamma=\frac{200}{\pi}$ Hz
b $\gamma=\frac{100}{\pi}$ Hz
c $\gamma=\frac{50}{\pi}$ Hz
d $\gamma=\frac{120}{\pi}$ Hz

36. A steel wire of 70 cm long has a mass of 7.0 mg. If the wire is under a tension of 100 N, The speed of the transverse wave is :

a 210 ms^{-1}
b 300 ms^{-1}
c 100 ms^{-1}
d 250 ms^{-1}

37. At what temperature will the speed of sound be double its value at 273 K ?

a 1192 K
b 1092 K
c 1292 K
d 1392 K

38. The equation of a plane progressive wave is given by
$y = 10 \sin 2\pi$ (t - 0.005 x) , the velocity of the wave is

a v = 120 cms^{-1}
b v = 130 cms^{-1}
c v = 300 cms^{-1}
d v = 200 cms^{-1}

39. A pipe of 50 cm long is open at both the ends. The speed of the sound is 340 ms^{-1}. Number of harmonic modes of the pipe resonantly exited by a 680 Hz is

a n = 4
b n = 2
c n = 3
d n = 5

40. A note produces 4 beats per second with a tuning fork of frequency 512 Hz and 6 beats per second with a tuning fork of frequency 514 Hz. The frequency of the note is:

a 510 Hz
b 520 Hz
c 508 Hz
d 500 Hz

CHEMISTRY

41. An element has atomic number 79. Predict the group and period in which the elements is placed
    a. 2^{nd}group,7^{th}period
    b. 11^{th}group,6^{th}period
    c. 13^{th}group,6^{th}period
    d. 12^{th}group,6^{th}period

42. Which block of the periodic table contains elements with the general electronics configuration (n-2) f^{1-14} (n-1) d^{0-1} ns^2
    a. *s*-block
    b. *p*-block
    c. *d*-block
    d. *f*-block

43. The shapes and hybridisation of BF_3 and BH^-_4 respectively are
    a. BF_3Trigonal,sp^2 hybridisation;
       BH^-_4 square planar ,sp^3 hybridisation
    b. BF_3Triangular,sp^3 hybridisation;
       BH^-_4 Hexagonal , sp^3d hybridisation;
    c. BF_3Trigonal,sp^2 hybridisation;
       BH^-_4 Tetrahedral , sp^3 hybridisation;
    d. BF_3 Tetrahedral,sp^3 hybridisation;
       BH^-_4 Tetrahedral, sp^3hybridisation.

44. What happens when a mixture of Cobalt Oxide and Borax is heated in a flame on a loop of Platinum wire?
    a. A transparent white bead is formed ;
    b. A bright pink coloured NaBO2 bead is formed ;
    c. A blue coloured $Co(BO_2)_2$ bead is formed;
    d. A red coloured $Co(BO_2)_2$ bead is formed.

45. $CuSO_4$ is paramagnetic while $ZnSO_4$ is diamagnetic because
    a. Cu^{2+} ion has $3d^9$ configuration while Zn^{2+} ion has $3d^{10}$ configuration;
    b. Cu^{2+} ion has $3d^5$ configuration while Zn^{2+} ion has $3d^6$ configuration;
    c. Cu^+ has half filled orbitals while Zn^{2+} has fully filled orbits;
    d. $CuSO_4$ is blue in colour while $ZnSO_4$ is white.

46. Yellow coloured aqueous solution of Sodium Chromate changes to orange when acidified with sulphuric acid because
    a. H^+ ion converts chromate ions to dichromate ions;
    b. H^+ ions react with sodium chromate to give sodium ions which turn solution orange;
    c. Cr^{3+} ions are liberated in the solution which turn solution orange;
    d. Sodium hydroxide is formed during the reaction which imparts orange colour to the solution.

47. The correct IUPAC name of the Coordination compound $K_3[Fe(CN)_5NO]$ is
    a. Potassium Pentacyanonitrosylferrate(II)
    b. Potassium Pentacyanonitrosylferrate(III)
    c. Potassium nitritopentacyanoferrate(IV)
    d. Potassium nitritepentacyanoiron(II)

48. The magnitude of magnetic moment of $[NiCl_4]^{2-}$

a	2.82 B.M	b	3.25 B.M
c	1.23 B.M	d	5.64 B.M

49. The weight of CO_2 in 10 L cylinder at 5 atm and 27°C

a	200 g	b	224 g
c	44 g	d	89.3 g

50. The Molecular mass of a gas at 78 g mol^{-1}. Its density at 98 °C and 1 atm will be

a	200 gL^{-1}	b	2.56 gL^{-1}
c	256 gL^{-1}	d	78 gL^{-1}

51. The work done during the expansion of a gas from 4 dm^3 to 6 dm^3 against a constant external pressure of 3 atm is

a	- 6 J	b	- 608 J
c	+ 304 J	d	- 304 J

52. For an isothermal reversible expansion process, the value of q can be calculated by the expression

a	$q = 2.303nRTlog\frac{V2}{V1}$	b	$q = -2.303nRTlog\frac{V2}{V1}$
c	$q = -nRTlog\frac{V1}{V2}$	d	$q = -P_{exp}\, nRTlog\frac{V2}{V1}$

53. What will be the heat of reaction for the following reaction ? Will the reaction be exothermic or endothermic ?

$$Fe_2O_{3(s)} + 3H_{2(g)} \rightarrow 2Fe_{(s)} + 3H_2O_{(l)}$$

$\Delta_f H°\ (H_2O_{(l)}) = -285.83$ kJ mol^{-1}

$\Delta_f H°\ (Fe_2O_{3(s)}) = -824.2$ kJ mol^{-1}

a	-824.2 kJ mol^{-1} , exothermic	b	+33.3 kJ mol^{-1} , endothermic
c	-33.3 kJ mol^{-1} , exothermic	d	+824.2 kJ mol^{-1} , endothermic

54. How many oxygen atoms will be present in 88 g of CO_2?

a	24.09×10^{23}	b	6.023×10^{23}
c	44×10^{23}	d	22×10^{24}

55. What will be the pH of 1×10^{-4}M H_2SO_4 solution ?

a	10.4	b	3.70
c	3.0	d	13.0

56. For which of the following reactions , $K_p = K_c$

a. $PCl_{3(g)} + Cl_{2(g)} \rightleftarrows PCl_{5(g)}$

b. $H_{2(g)} + Cl_{2(g)} \rightleftarrows 2HCl_{(g)}$

c. $N_{2(g)} + 3H_{2(g)} \rightleftarrows 2NH_{3(g)}$

d. $CaCO_{3(s)} \rightleftarrows CaO_{(s)} + CO_{2(g)}$

57. How many sigma (σ) and Pi (π)bonds are present in Toluene

a $10\,\sigma$ and 3π *bonds* b $12\,\sigma$ and 3π *bonds*
c $15\,\sigma$ and 3π *bonds* d 6 σ and 3π *bonds*

58. $\Delta_r G°$ for the cell with the cell reaction:

$Zn_{(s)} + Ag_2O_{(s)} + H_2O_{(l)} \rightarrow Zn^{2+}_{(aq)} + 2Ag_{(s)} + 2OH^-_{(aq)}$

$[E°_{Ag2O/Ag} = 0.344\ V,\ E°_{Zn^{2+}/Zn} = -0.76\ V]$

a $2.13 \times 10^5\ Jmol^{-1}$ b $-2.13 \times 10^5\ Jmol^{-1}$
c $1.06 \times 10^5\ Jmol^{-1}$ d $-1.06 \times 10^5\ Jmol^{-1}$

1

59. The first order reaction has a rate constant $1.15 \times 10^{-3}\ s^{-1}$, how long will 5 g of this reactant take to reduce to 3 g ?

a 444 s b 400 s
c 528 s d 669 s

60. What is the role of activated charcoal in gas masks used in mines ?
a. It acts as an adsorbent for poisonous gas present in coal mines.
b. It acts as an adsorbent for coal particles present in coal mines.
c. It acts as a mask through which exhaled gases are diffused out.
d. It acts as a base for scattering the light.

61. What happens when a carboxylic acid is treated with lithium aluminium hydride:

a Aldehyde is formed b Primary alcohol is formed
c Ketone is formed d Grignard reagent is formed

62. The compound used as a preservative , for food products such as tomato ketchup and fruit juices:

a Sodium salicylate b Sodium benzoate
c Sodium acetate d Formic acid

63. Phenol when treated with exess of bromine water gives a white precipitate of :

a 2,4,6 - tribromophenol b *O*- bromophenol
c *p*-bromophenol d Bromobenzene

64. Benzoquinone is prepared by the reaction of phenol with :

a $Na_2Cr_2O_7, H_2SO_4$ b $KMnO_4, H_2SO_4$
c Na_2CrO_4, HCl d K_2MnO_4, H_2SO_4

65. Ethers are prepared by the reaction of sodium alkoxides and alkyl halides. Which of the following reagents should be taken to prepare methyl *tert*-butyl ether?

a $(CH_3)_3C\text{-}Br + NaOCH_3$ b $CH_3Br + NaOC(CH_3)_3$
c $CH_3CH_2Br + NaOC(CH_3)_3$ d $(CH_3)_3C\text{-}Br + NaOCH_2\ CH_3$

66. How many geometrical isomers are possible for the given compound ?

$CH_3 - CH = CH - CH = CH - C_2H_5$

a Four b Three
c Two d Five

67. Which of the following Isomeric heptanes can yield seven different monochlorinated products upon free radical chlorination:

a 2,2 - Dimethylpentane
b 2- Methylhexane
c 3- Methylhexane
d 2,4 - Dimethylpentane

68. Primary amines reacts with benzoyl chloride to give :

a Benzamides
b Ethanamides
c Imides
d Imines

69. Acetylation of secondary amine in alkaline medium yields

a N,N- dialkylacetamide
b N,N- dialkylamine
c N,N- dialkylamide
d acetyl- dialkylamine

70. Primary amines react with acid chloride or acid anhydride to form:

a Tertiaryammonium salts
b Substituted amides
c Diazonium salts
d Nitro compounds

BIOLOGY

71. The cell theory, which states that all living organisms are composed of cells and that the cell is the basic unit of life, was given by
(a) Schleiden and Schwann
(b) Robert Hook
(c) Watson and Crick
(d) Charles Darwin

72. The gaseous exchange between the cells as well as the cell and its external environment takes place mainly by
(a) capillarity
(b) transpiration
(c) ion-exchange
(d) diffusion

73. The process of breaking down pyruvate to give carbon dioxide, water and energy occurs in which of the following cellular organelles?
(a) Cytoplasm
(b) Mitochondria
(c) Chloroplast
(d) Nucleus

74. This naming system with a two-word format, i.e. generic name and the specific epithet widely practiced by biologists was given by
(a) R.H. Whittaker
(b) Ernst Mayr
(c) Carolus Linnaeus
(d) Bentham and Hooker

75. Which one of the following statements about the classification of plants is CORRECT?
(a) Algae have well-differentiated plant body design
(b) Water is needed for fertilization in Pteridophytes
(c) The vascular system is found in Bryophytes
(d) *Marchantia* is a fungus

76. Living organisms are categorized into subgroups like plant kingdoms/animal kingdoms. Which one of the following is NOT correct for the plant kingdom?
(a) Can make their food
(b) They have chlorophyll
(c) Glycogen is reserve food
(d) The body contains cellulose

77. Which one of the following statements regarding the root system in mustard plants is CORRECT?
(a) The primary root is short-lived
(b) It has a tap root system
(c) It has a fibrous root system
(d) It has adventitious roots

78. Which of the following statements accurately describes the Casparian strip in plant anatomy?
(a) It is composed of cellulose and lignin
(b) It allows for the free flow of water and nutrients
(c) It is composed of water-impermeable suberin
(d) It facilitates the exchange of gases through its porous structure

79. Which one of the following statements about dark reactions in photosynthesis is INCORRECT?
(a) It takes place in Stroma
(b) Glucose is produced
(c) It occurs in darkness
(d) ATP and NADPH are used

80. In conditions of oxygen deficiency, yeast cells break down glucose, resulting in the production of
(a) lactic acid + energy
(b) carbon dioxide + water + energy
(c) ethanol + carbon dioxide + energy
(d) pyruvic acid + carbon dioxide + energy

81. The hormone that increases the tolerance of plants to various kinds of stresses like drought is
(a) Abscisic acid
(b) Ethylene
(c) Auxin
(d) Gibberellins

82. The innermost wall layer in a microsporangium, which nourishes the developing pollen grains, is
(a) endothecium
(b) placenta
(c) nucellus
(d) tapetum

83. Which one of the following processes is NOT responsible for a change in the density of a population in a habitat over a given period?
(a) Mutation
(b) Mortality
(c) Immigration
(d) Natality

84. Bt Cotton is a genetically modified crop plant where the incorporated gene is meant for the production of
(a) insecticidal protein
(b) salt-tolerant protein
(c) drought resistant protein
(d) heat resistant protein

85. While using a compound microscope, a student adjusts the diaphragm. This will
(a) increase the image resolution
(b) magnify the image
(c) control the amount of light reaching the specimen
(d) fix the specimen on the stage

86. Which one of the following organisms can be found in extreme saline conditions?
(a) Eubacteria
(a) Archaebacteria
(b) Cyanobacteria
(c) Myobacteria

87. Smallest taxon of classification is
(a) Kingdom
(b) Family
(c) Variety
(d) Species

88. Phylogenetic classification is based on
(a) overall similarities
(b) habit of plants
(c) common evolutionary descendants
(d) all of these

89. Which class has the largest number of animals?
(a) Fishes
(b) Reptiles
(c) Insects
(d) Mammals

90. Identify the characteristics of Acoelomates
(a) Absence of mesoderm
(b) Absence of brain
(c) Coelom that is completely linked with mesoderm
(d) Solid body without a cavity surrounding internal organs.

91. _____ is a merocrine gland.
(a) Pineal gland
(b) Sebaceous gland
(c) Salivary gland
(d) None of the above

92. Antigens are typically found in
(a) Plasma
(b) Cell surface
(c) Nuclear Membrane
(d) None of the above

93. _____ is the enzyme needed for muscle contraction. It is present in myosin.
(a) Actin
(b) Trypsin
(c) ATPase
(d) None of the above

94. Chromatids coiling in meiotic and mitotic division is
(a) Plectomic in both
(b) Paranemic in both
(c) Paranemic in mitosis and Plectonemic in meiosis
(d) Plectonemic in mitosis and Paranemic in meiosis.

95. The condensation of chromosomes is observed in
(a) Prophase I
(b) Anaphase I
(c) Metaphase I
(d) None of the above

96. Nuclear DNA replicates in the
(a) G2 phase
(b) M phase
(c) S phase
(d) None of the above

97. The small intestine has three parts. The first part is called
(a) Duodenum
(b) Oesophagus
(c) Larynx
(d) None of the above

98. A lytic enzyme released by the sperm is
(a) Hyaluronidase
(b) Trypsin
(c) Helicase
(d) None of the above

99. How many autosomes does human primary spermatocyte have?
(a) 34
(b) 44

(c) 54
(d) 33

100. An organelle that helps the sperm to penetrate the ovum is
(a) Acrosome
(b) Zonapellucida
(c) Megalis
(d) None of the above

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ANSWER KEY

Physics

1-b	2-c	3-b	4-a	5-d	6-c
7-b	8-c	9-d	10-b	11-d	12-c
13-a	14-d	15-b	16-c	17-a	18-a
19-a	20-c	21-d	22-b	23-a	24-b
25-a	26-c	27-a	28-d	29-b	30-c
31-b	32-c	33-d	34-b	35-a	36-c
37-b	38-d	39-b	40-c		

Chemistry

41-b	42-d	43-c	44-c	45-a	46-a
47-a	48-a	49-d	50-b	51-b	52-b
53-c	54-a	55-b	56-b	57-c	58-b
59-a	60-a	61-b	62-b	63-a	64-a
65-b	66-a	67-c	68-a	69-a	70-b

Biology

71. a	72. d	73. b	74. c	75. b	76. c
77. b	78. c	79. c	80. c	81. a	82. d
83. a	84. a	85. c	86. c	87. d	88. d
89. c	90. d	91. c	92. b	93. c	94. d
95. a	96. c	97. a	98. a	99. b	100. a