

FIITJEE Big Bang Edge Test - 2022

for students presently in **Class 9 (going to 10) (Paper 2)**

Time: 3 Hours (2:00 pm – 5:00 pm)

CODE: 910-2

Maximum Marks: 272

Instructions:

Caution: Class, Paper, Code as given above MUST be correctly marked on the answer OMR sheet before attempting the paper. Wrong Class, Paper or Code will give wrong results.

1. You are advised to devote 55 Minutes on Section-I, 45 Minutes on Section-II, 40 Minutes on Section-III and 40 Minutes on Section-IV.
2. This Question paper consists of 4 sections. Marking scheme is given in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			Correct answer	Wrong answer
SECTION – I	PHYSICS (PART-A)	1 to 12	+1	0
	CHEMISTRY (PART-B)	13 to 24	+1	0
	MATHEMATICS (PART-C)	25 to 36	+1	0
	BIOLOGY (PART-D)	37 to 48	+1	0
SECTION – II	PHYSICS (PART-A)	49 to 52	+4	-1
	CHEMISTRY (PART-B)	53 to 56	+4	-1
	MATHEMATICS (PART-C)	57 to 60	+4	-1
	BIOLOGY (PART-D)	61 to 68	+4	-1
SECTION – III	PHYSICS (PART-A)	69 to 76	+3	-1
	CHEMISTRY (PART-B)	77 to 84	+3	-1
	BIOLOGY (PART-C)	85 to 92	+3	-1
SECTION – IV	PHYSICS (PART-A)	93 to 97	+3	0
	CHEMISTRY (PART-B)	98 to 102	+3	0
	MATHEMATICS (PART-C)	103 to 107	+3	0
	PHYSICS (PART-D)	108 to 110	+3	0
	CHEMISTRY (PART-E)	111 to 113	+3	0
	MATHEMATICS (PART-F)	114 to 116	+3	0

3. Answers have to be marked on the OMR sheet. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.
4. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
5. **Before attempting paper write your OMR Answer Sheet No., Registration Number, Name and Test Centre** in the space provided below.
6. **See method of marking of bubbles at the back of cover page for question no. 108 to 116.**

Note: Please check this Question Paper contains all **116** questions in serial order. If not so, exchange for the correct Question Paper.

OMR Answer Sheet No. : _____

Registration Number : _____

Name of the Candidate : _____

Test Centre : _____

For questions 108 to 116

Numerical based questions single digit answer 0 to 9

Example 1:

If answer is 6.

Correct method:

① ② ③ ④ ⑤ ● ⑦ ⑧ ⑨

Example 2:

If answer is 2.

Correct method:

① ② ● ④ ⑤ ⑥ ⑦ ⑧ ⑨

SAMPLE PAPER

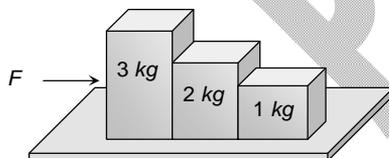
Recommended Time: 55 Minutes for Section – I

Section – I

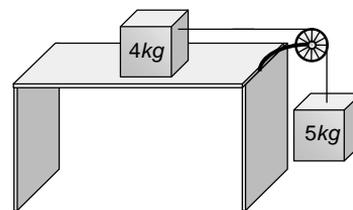
PHYSICS – (PART – A)

This part contains **12 Multiple Choice Questions** number 1 to 12. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. A man fires a bullet of mass 200 g at a speed of 5 m/s. The gun is of one kg mass. by what velocity the gun rebounds backwards
 (A) 0.1 m/s (B) 10 m/s
 (C) 1 m/s (D) 0.01 m/s
2. Velocity of a body on reaching the point from which it was projected upwards, is
 (A) $v = 0$ (B) $v = 2u$
 (C) $v = 0.5u$ (D) $v = u$
3. Consider the following statements about the blocks shown in the diagram that are being pushed by a constant force on a frictionless table



- A. All blocks move with the same acceleration
 - B. The net force on each block is the same
 Which of these statements are/is correct
 (A) A only (B) B only
 (C) Both A and B (D) Neither A nor B
4. Two masses of 4 kg and 5 kg are connected by a string passing through a frictionless pulley and are kept on a frictionless table as shown in the figure. The acceleration of 5 kg mass is
 (A) 49 m/s^2
 (B) 5.44 m/s^2
 (C) 19.5 m/s^2
 (D) 2.72 m/s^2

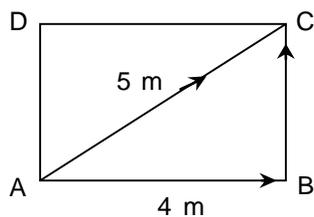


Space for Rough Work

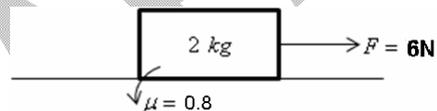
5. A body of mass m collides against a wall with a velocity v and rebounds with the same speed. Its change of momentum is
(A) $2mv$ (B) mv
(C) $-mv$ (D) Zero
6. Relation between 'Newton' and 'Dyne'
(A) $1\text{ N} = 10^5\text{ dyne}$ (B) $1\text{ N} = 10^2\text{ dyne}$
(C) $1\text{ N} = 1\text{ dyne}$ (D) $1\text{ dyne} = 10^5\text{ N}$
7. A ball of mass m_1 and another ball of mass m_2 are dropped from equal height. If time taken by the balls are t_1 and t_2 respectively, then
(A) $t_1 = \frac{t_2}{2}$ (B) $t_1 = t_2$
(C) $t_1 = 4t_2$ (D) $t_1 = \frac{t_2}{4}$
8. When a body is projected vertically upwards with a velocity 10 m/s , its speed after 1 seconds is ($g = 10\text{ m/s}^2$):
(A) 20 m/s (B) zero
(C) 10 m/s (D) 15 m/s
9. If a particle moves in a circle describing equal angles in equal times, its velocity vector
(A) Remains constant (B) Changes in magnitude
(C) Changes in direction (D) Changes both in magnitude and direction
10. The momentum of a system is conserved
(A) Always
(B) Never
(C) In the absence of an external force on the system
(D) None of the above

Space for Rough Work

11. A toy car moves along the length and breadth of a rectangle as shown in the figure given below. If the length of the rectangle is 4 m, then find the ratio of displacement to distance covered by the car.



- (A) $\frac{5}{3}$
 (B) $\frac{7}{3}$
 (C) $\frac{5}{7}$
 (D) $\frac{5}{4}$
12. A block of mass 2 kg is placed on a rough surface, $F = 6\text{ N}$ is applied on the block as shown, force of friction on the block is



- (A) 12 N
 (B) 0 N
 (C) 10 N
 (D) 6 N

Space for Rough Work

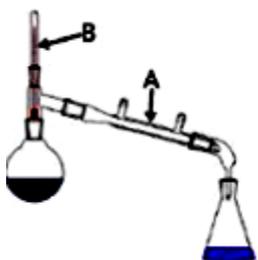
CHEMISTRY – (PART – B)

This part contains 12 Multiple Choice Questions number 13 to 24. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

13. What is the percent concentration of sugar in pink lemonade if 28.0g of sugar is added to 209g of water?
(A) 14.7% (B) 5.14%
(C) 13.4% (D) 11.8%

14. Which of the following properties of colloids does not depend on the charge on particles?
(A) Coagulation (B) Electro-osmosis
(C) Electrophoresis (D) Tyndall effect

15. In the distillation apparatus shown, what are the parts labelled A and B?



- (A) A = funnel, B = thermometer (B) A = condenser, B = flask
(C) A = condenser, B = thermometer (D) A = thermometer, B = funnel
16. Electrodialysis is used, when impurities in a sol are:
(A) amphiphiles (B) colloids
(C) electrolytes (D) nonelectrolytes
17. What is the percent by volume of isopropyl alcohol in a solution that contains 24 mL of isopropyl alcohol in 1.1L of water
(A) 2.1% (B) 1.2%
(C) 12.2% (D) 3.2%

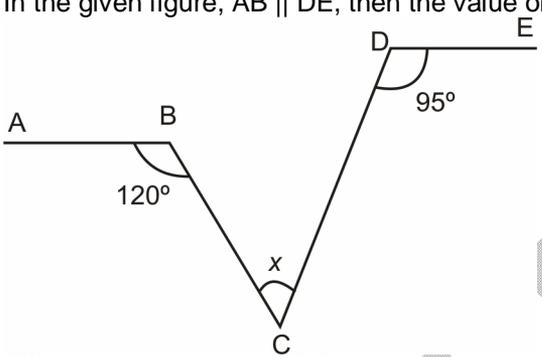
Space for Rough Work

18. Which gas is mixed with oxygen by sea-divers at the high underwater pressure.
(A) N_2 (B) Ne
(C) H_2 (D) Ar
19. In which of the following conditions, the distance between the molecules of hydrogen gas would increase?
(I) Increasing pressure on hydrogen contained in a closed container
(II) Some hydrogen gas leaking out of the container
(III) Increasing the volume of the container of hydrogen gas
(IV) Adding more hydrogen gas to the container without increasing the volume of the container
(A) I and III (B) I and IV
(C) II and III (D) II and IV
20. For most gases, what happens to the solubility as the temperature increases?
(A) solubility increase (B) solubility decreases
(C) solubility stays the same (D) None of these
21. Which of the following solutions will be transparent to a bright source of light?
(A) Boiled starch solution (B) Sugar solution
(C) Egg white solution (D) Flour solution
22. The substance which gives colloidal solution in water, is
(A) Soap (B) Alum
(C) Sugar (D) POP
23. What is false about pure substance :
(A) It contain only kind of atom or molecule (B) It is perfectly homogeneous
(C) It has definite melting point (D) Its composition change with time.
24. Tyndall effect depends upon the
(A) Charge on the colloidal particles
(B) Difference between the refractive indices of dispersed phase and dispersion medium
(C) Size of the colloidal particles
(D) Magnitude of the charge

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains 12 Multiple Choice Questions number 25 to 36. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

25. What will be the value of k if $2^{100} - 2^{99} - 2^{98} + 2^{97} = k \cdot 2^{97}$
 (A) 1 (B) 2 (C) 3 (D) 4
26. If $a^{\frac{1}{3}} + b^{\frac{1}{3}} + c^{\frac{1}{3}} = 0$, then
 (A) $a + b + c = 0$ (B) $(a + b + c)^3 = 27abc$ (C) $a + b + c = 3abc$ (D) $a^3 + b^3 + c^3 = 0$
27. In the given figure, $AB \parallel DE$, then the value of x is
- 
- (A) 25° (B) 35° (C) 45° (D) 55°
28. The lengths of the sides of a triangle are integral. If the perimeter of triangle is 6 cm, then how many such triangles are possible ?
 (A) 0 (B) 1 (C) 2 (D) 3
29. If the centroid of the triangle formed by the points (a, b) , (b, c) and (c, a) is at the origin, then $a^3 + b^3 + c^3$ is equal to
 (A) abc (B) 0 (C) $a + b + c$ (D) $3abc$
30. Which of the following case corresponding line does not pass through origin ?
 (A) $y = x$ (B) $y = -x$ (C) $x = 2y$ (D) $2x + 3y = 10$

Space for Rough Work

31. A diagonal of a rectangle is inclined to one side of the rectangle at 25° . The acute angle between the diagonals is
(A) 55° (B) 40° (C) 25° (D) 50°
32. If $x + \frac{1}{x} = -2$, then find the value of $x^{2n+1} + \frac{1}{x^{2n+1}}$ where n is a positive integer
(A) 2 (B) 0 (C) -2 (D) None of these
33. If A (0, 3); B(-2, 0); C(0, -3) and D (2, 0) form a rhombus ABCD, then what is the area of rhombus ABCD ?
(A) $\sqrt{29}$ units² (B) 24 units² (C) 12 units² (D) None of these
34. The difference between the semi perimeter and the sides of $\triangle ABC$ are 8 cm, 7 cm and 5 cm respectively. The area of triangle
(A) $10\sqrt{7}$ cm² (B) $20\sqrt{7}$ cm² (C) $20\sqrt{14}$ cm² (D) 140 cm²
35. The product of any three consecutive positive integers is always divisible by
(A) 6 (B) 7 (C) 8 (D) 9
36. If $x = \frac{1}{2 - \sqrt{3}}$, the value of $x^3 - 2x^2 - 7x + 5$ equals
(A) 0 (B) -5 (C) 5 (D) 3

Space for Rough Work

BIOLOGY – (PART – D)

This part contains 12 Multiple Choice Questions number 37 to 48. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

37. The membrane lining the intestine is made up of
(A) Columnar epithelium (B) Cuboidal epithelium
(C) Stratified squamous epithelium (D) Ciliated epithelium
38. Nissl granules are found in
(A) Liver cells (B) Alveolar tissue
(C) Nerve cells (D) Red blood corpuscles
39. Rough ER:
(A) lacks ribosomes
(B) is the site of protein synthesis
(C) consists of vesicles that contain digestive enzymes
(D) includes plasma membrane and neighbouring organelles
40. Autolysis is connected with:
(A) Ribosome (B) Lysosome
(C) Kinetosome (D) Golgi apparatus
41. The smallest organelles in the cell are:
(A) microsomes (B) lysosomes
(C) dictyosomes (D) ribosomes
42. Which of the following phenomena is commonly referred as 'cell drinking'?
(A) Exocytosis (B) Pinocytosis
(C) Endocytosis (D) Phagocytosis
43. pH of human blood is :
(A) 6.2 (B) 7.4
(C) 9.0 (D) 10

Space for Rough Work

44. Cork cambium is a
(A) secondary meristem (B) intercalary meristem
(C) primary meristem (D) apical meristem
45. Striated muscles are found in
(A) gall bladder (B) wall of bronchi
(C) leg muscles (D) lungs
46. Parenchymatous cells which are thickened with cellulose at the corner are called
(A) collenchymas (B) sclerenchyma
(C) parenchyma and sclerenchyma (D) none of these
47. What will happen to an animal cell placed in a salt water solution?
(A) The cell will shrink
(B) The cell will expand
(C) The cell will burst
(D) The cell will shrink and then expand and then shrink again
48. What happen in meiosis division?
(A) pairing of homologous chromosomes (B) chiasmata formation
(C) crossing over (D) All of these

Space for Rough Work

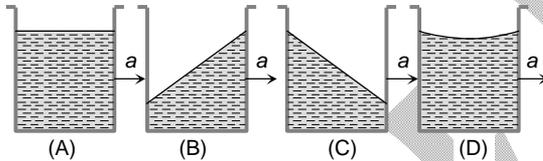
Recommended Time: 45 Minutes for Section – II

Section – II

PHYSICS – (PART – A)

This part contains 4 Multiple Choice Questions number 49 to 52. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

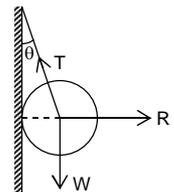
49. A particle is dropped under gravity from rest from a height h ($g = 9.8 \text{ m/sec}^2$) and it travels a distance $9h/25$ in the last second, the height h is
 (A) 100 m (B) 122.5 m
 (C) 145 m (D) 167.5 m
50. Which of the following groups of forces could be in equilibrium
 (A) 3 N, 4 N, 5 N (B) 4 N, 5 N, 10 N
 (C) 30 N, 40 N, 80 N (D) 1 N, 3 N, 5 N
51. A vessel containing water is given a constant acceleration a towards the right, along a straight horizontal path. Which of the following diagram represents the surface of the liquid



- (A) A (B) B
 (C) C (D) D

52. A metal sphere is hung by a string fixed to a wall. The forces acting on the sphere are shown in figure. Which of the following statement is correct:

- (A) $\vec{R} + \vec{T} + \vec{W} = 0$ (B) $R = T + W$
 (C) $T = R + W$ (D) $R = \tan\theta$



Space for Rough Work

CHEMISTRY – (PART – B)

*This part contains 4 Multiple Choice Questions number 53 to 56. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

53. Which of the following components does not get separated by chromatographic technique?
(A) Salt from sea water (B) Pigments from natural colours
(C) Colours in a dye (D) Drugs from blood
54. What precaution should be taken while separating the coloured components of ink?
(A) ink should not be heated directly
(B) ink should be heated directly on low temperature
(C) Ink should be heated directly on high temperature
(D) None of the above
55. The aim of crystallization is:
(A) to collect solvent or solute (B) to collect solute in the form of crystals.
(C) to collect both solvent and solute (D) to collect solvent
56. Butter is a colloid from in which:
(A) fat is dispersed in solid casein (B) fat globules are dispersed in water
(C) water is dispersed in fat (D) suspension of casein is in water

Space for Rough Work

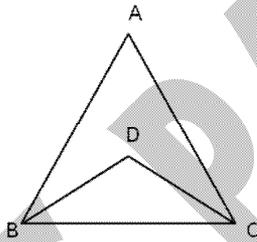
MATHEMATICS – (PART – C)

This part contains 4 Multiple Choice Questions number 57 to 60. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

57. If $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$, then find the value of x
 (A) -5 (B) -6 (C) -4 (D) -2

58. If $2x + \frac{1}{3x} = 5$, then find the value of $\frac{5x}{6x^2 + 20x + 1}$
 (A) $\frac{1}{4}$ (B) $\frac{1}{6}$ (C) $\frac{1}{5}$ (D) $\frac{1}{7}$

59. In $\triangle ABC$, $\angle A$ is 120° . A point D is inside the triangle such that $\angle DBC = 2\angle ABD$ and $\angle DCB = 2\angle ACD$. What is the measure of $\angle BDC$



- (A) 135° (B) 140° (C) 145° (D) 150°

60. If an ordered pair, satisfying the simultaneous equation $x + y = 7$, $3x - 2y = 11$ is also satisfies the equation $3x + Py - 17 = 0$, the value of P is
 (A) 2 (B) -2 (C) 1 (D) 3

Space for Rough Work

BIOLOGY – (PART – D)

This part contains 8 Multiple Choice Questions number 61 to 68. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

61. Most of the water, in mature plants cells occurs chiefly in which of the following?
(A) Nucleus (B) Cell wall
(C) Vacuoles (D) Cytoplasm
62. Which of the following are most plentiful and best developed in parts of cells where energy-requiring processes take place?
(A) Lysosomes (B) Ribosomes
(C) Endoplasmic reticulum (D) Mitochondria
63. The nucleolus is the site of formation of:
(A) ribosomes (B) peroxisomes
(C) chromosomes (D) spindle fibres
64. Plasmolysis in a cell occurs when it is kept in:
(A) water (B) hypotonic solution
(C) isotonic solution (D) hypertonic solution
65. Which cell organelle is absent in the leaves of onion?
(A) Nucleus (B) Cell wall
(C) Centriole (D) Endoplasmic reticulum
66. Smooth endoplasmic reticulum acts as a major site for synthesis of:
(A) Ribosomes (B) DNA
(C) Lipids and steroids (D) Proteins
67. Oxysomes or F_1 particles occur on:
(A) thylakoids (B) chloroplast surface
(C) mitochondrial surface (D) inner mitochondrial membrane
68. Which of the following is an inclusion?
(A) Mitochondrion (B) Lysosome
(C) Golgi complex (D) Starch grain

Space for Rough Work

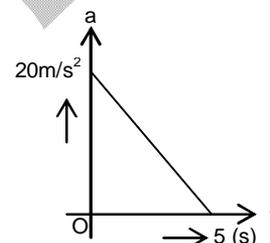
Recommended Time: 40 Minutes for Section - III

Section - III

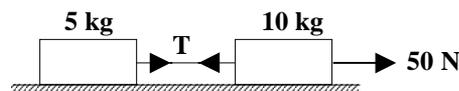
PHYSICS - (PART - A)

This part contains 8 Multiple Choice Questions number 69 to 76. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

69. Choose the correct option (T - true; F - False):
 (i) Unbalanced forces cannot set a stationary body in motion.
 (ii) A Balanced force acts on a body moving with constant velocity.
 (iii) If net force on a body is zero, its acceleration is zero.
 (A) TFT (B) FFT
 (C) FTT (D) FTF
70. A particle starts from rest. Its acceleration (a) versus time (t) varies as shown in the fig. The maximum speed of the particle will be
 (A) 50 m/s
 (B) 55 m/s
 (C) 60 m/s
 (D) 70 m/s



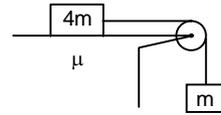
71. A 1000 Kg aeroplane moves in straight flight with a constant velocity. The force of air friction is 1800 N. The net force on the plane is
 (A) zero (B) 1800 N
 (C) 9000 N (D) 3600 N
72. Two blocks of mass 5 kg and 10 kg respectively are connected by a massless string as shown in the figure. The whole system is kept on a frictionless surface. A force of 50 N is applied horizontally as shown in the figure. The tension T in the string will be



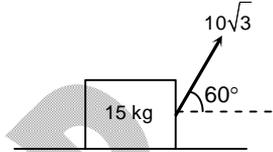
- (A) $\frac{50}{3}$ N (B) 25 N
 (C) 50 N (D) $\frac{100}{3}$ N

Space for Rough Work

73. The minimum value of μ required to keep the system in equilibrium is
 (A) 0.25 (B) 0.75
 (C) 1 (D) 0.5



74. The normal force acting on the block by the floor is ($g = 9.8 \text{ m/s}^2$)
 (A) 100 N (B) 135 N
 (C) 150 N (D) 96 N

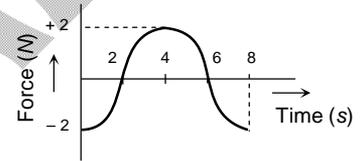


75. The tension in the spring is



- (A) Zero (B) 2.5 N
 (C) 5 N (D) 10 N

76. The force-time ($F - t$) curve of a particle executing linear motion is as shown in the figure. The momentum acquired by the particle in time interval from zero to 8 second will be
 (A) -2 N-s
 (B) $+4 \text{ N-s}$
 (C) 6 N-s
 (D) Zero



Space for Rough Work

CHEMISTRY – (PART – B)

This part contains **8 Multiple Choice Questions** number **77 to 84**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

77. Hydrogen in palladium is an example of:
(A) gas in gas (B) gas in liquid (C) liquid in solid (D) gas in solid.
78. If we heat iodine, then it is a:
(A) Physical change (B) Chemical change
(C) No change take place (D) Can't be determined
79. Substances whose solutions can readily diffuse through animal membranes are called:
(A) colloids (B) solution
(C) electrolytes (D) non-electrolytes
80. Artificial rain, is based on the principle of
(A) Emulsification (B) peptization (C) Tyndall effect (D) Coagulation
81. The process of making a precipitate is from colloids called
(A) Vulcanization (B) Peptization (C) Coagulation (D) Dissolution
82. Which of the following will show Tyndall effect?
(A) Aqueous solution of soap below critical micelle concentration
(B) Aqueous solution of soap above critical micelle concentration
(C) Aqueous solution of sodium chloride
(D) Aqueous solution of sugar
83. When a solution is heated the water evaporates and solute
(A) evaporates too (B) left as residue (C) disappear (D) condense
84. The blue colour of the water of the sea is due to:
(A) refraction of the blue light by the impurities in sea water
(B) reflection of blue light by sea water
(C) scattering of blue light by sol particles
(D) absorption of other colours except the blue colour by water molecules

Space for Rough Work

BIOLOGY – (PART – C)

*This part contains 8 Multiple Choice Questions number 85 to 92. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

85. The lymph serves to:
 (A) transport oxygen to brain
 (B) transport CO₂ to lungs
 (C) return the interstitial fluid to the blood
 (D) return the WBCs and RBCs to lymph nodes
86. Ligaments and tendons are formed of:
 (A) Epithelial tissue
 (B) Muscular tissue
 (C) Cartilage
 (D) Connective tissue
87. Collagen fibres of connective tissue are:
 (A) Yellow
 (B) White
 (C) Red
 (D) Transparent
88. Lifespan of human RBCs is:
 (A) 120 days
 (B) 20 days
 (C) 2-3 days
 (D) 90 days
89. Which of the following correctly matches an organelle with its function?
 (A) Lysosome – Secretion
 (B) Nucleus – Photosynthesis
 (C) Ribosome – Lipid synthesis
 (D) Mitochondria – Cellular respiration
90. Which of the following organelles exhibits polymorphism?
 (A) Lysosome
 (B) Nucleus
 (C) Ribosome
 (D) Mitochondrion
91. Cilia and flagella possess:
 (A) similar size and structure
 (B) dissimilar size and structure
 (C) similar structure but dissimilar size
 (D) similar size but dissimilar structure
92. In medullated nerve fibres nodes of Ranvier are:
 (A) area of swelling on axons
 (B) areas found in stomach wall
 (C) areas where myelin sheath is absent on neuron
 (D) nodes formed in striated muscles

Space for Rough Work

Recommended Time: 40 Minutes for Section – IV

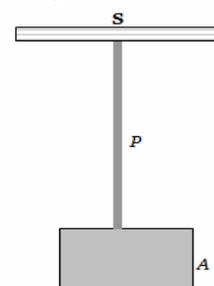
Section – IV

PHYSICS – (PART – A)

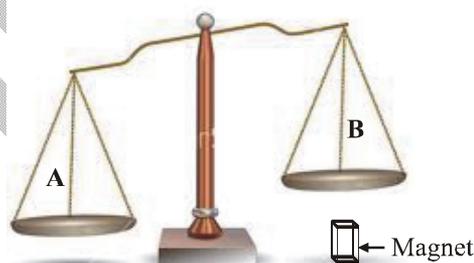
*This part contains 5 Multiple Choice Questions number 93 to 97. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

93. A body of mass m is kept stationary on a rough inclined plane of inclination θ . The magnitude of force acting on the body by the inclined plane is
 (A) mg (B) $mg \sin \theta$
 (C) $mg \cos \theta$ (D) $mg\sqrt{1 + \cos^2 \theta}$

94. A block A of mass m is attached at one end of a massive rope of mass M and Length L , the system is suspended from a rigid support S, as shown in figure. In figure point P is the mid point of rope, then tension in string at point P will be
 (A) Mg (B) $(M + m)g$
 (C) $\left(\frac{M}{2} + m\right)g$ (D) $\left(M + \frac{m}{2}\right)g$



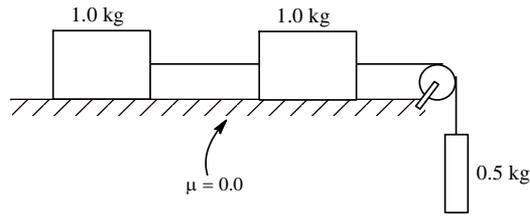
95. A grocery shop keeper develops a trick to cheat the customers, He keeps a hidden magnet under one of the iron pan of the beam balance as shown in figure. Then to fulfill his purpose he should place the item to be weighed in:



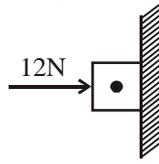
- (A) Pan A (B) Pan B
 (C) Pan A or Pan B (D) The trick will not work

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96. Consider the situation shown in the figure below and calculate the tension in the string connecting the 1.0 kg blocks



- (A) 2.00 N
 (B) 1.96 N
 (C) 1.98 N
 (D) 2.02 N
97. A block of weight 5 N is pushed against a vertical wall by a force 12 N. The coefficient of friction between the wall and block is 0.6. The magnitude of the force exerted by the wall on the block is



- (A) 12 N
 (B) 5 N
 (C) 7.2 N
 (D) 13 N

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CHEMISTRY – (PART – B)

This part contains 5 Multiple Choice Questions number 98 to 102. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

98. Medicines are more effective if they are used in:
(A) colloidal state (B) solid state
(C) solution state (D) none of these
99. Bleeding is stopped by the application of ferric chloride. This is because:
(A) the blood starts flowing in the opposite direction
(B) the blood reacts and a solid is formed which seals the blood vessel
(C) the blood is coagulated and the blood vessel are sealed
(D) the ferric chloride seals the blood vessel
100. Which of the following is one of the two condition of Tyndall effect
(A) The diameter of the dispersed phase is not much smaller than the wavelength of light used.
(B) The diameter of the dispersed phase is greater than the wavelength of light used.
(C) The diameter of the dispersed phase is equal to the wavelength of light used.
(D) The diameter of the dispersed phase must be very smaller than the wavelength of light used.
101. In a chromatographic technique, a sample whose components needs to be separated is placed:
(A) At the top of the filter paper. (B) About 2-3 cm from top of the filter paper.
(C) At the bottom of the filter paper (D) About 2-3 cm from bottom of the filter paper
102. What is the basic principle behind simple distillation process?
(A) Sufficient difference in the boiling points of two miscible liquids and the two liquids should boil without decomposition.
(B) The two liquids should be immiscible.
(C) Difference in boiling and melting points of two miscible liquids should be less than 30°C.
(D) The two liquids should have molecular weight greater than 200 g/mol.

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MATHEMATICS – (PART – C)

This part contains 5 Multiple Choice Questions number 103 to 107. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

103. If the area of an isosceles right triangle is 8 cm, what is the perimeter of triangle ?
 (A) $(8 + \sqrt{2})$ cm (B) $(8 + 4\sqrt{2})$ cm (C) $(4 + 8\sqrt{2})$ cm (D) $12\sqrt{2}$ cm
104. $98a63$ is always divisible by 3, hence 'a' can not be
 (A) 1 (B) 3 (C) 4 (D) 7
105. If x, y and z are real numbers such that $\frac{x^2}{2} + y^2 + z^2 = (xy + yz + zx) - \frac{1}{2}$, then possible value of $x + y - 2z$ is
 (A) 1 (B) 2 (C) -1 (D) 0
106. In $\triangle ABC$, the points B and C are (-3, 1) and (0, -2) respectively. If the centroid of this triangle is the origin, then the coordinates of A are
 (A) $(\frac{7}{2}, \frac{1}{2})$ (B) (4, 0) (C) (1, 2) (D) (3, 1)
107. The circumcentre of a triangle whose vertices are (-2, -3), (-1, 0) and (7, -6) is
 (A) (-3, 3) (B) (3, -3) (C) (-3, -3) (D) none of these

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PHYSICS – (PART – D)

This part contains 3 Numerical Based Questions number 108 to 110. Each question has Single Digit Answer 0 to 9.

108. A car moving along a long straight road with a speed of 10 m/s is brought to rest within 10 seconds after applying the brakes. What is the magnitude of the retardation of the car?
109. A body of mass 2 kg moving with a velocity of 3 m/s collides head on with a body of mass 1kg moving in opposite direction with a velocity 4 m/s. After collision two bodies stick together and move with a common velocity of $K/3$ m/s, find the value of K.
110. A block of mass 10 kg is placed on a rough horizontal surface having coefficient of friction $\mu = 0.5$. If a horizontal force of 100 N is acting on it, then acceleration of the block will be?

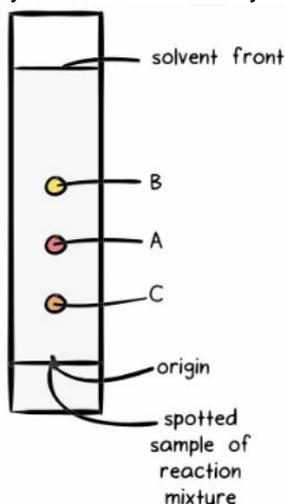
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SAMPLE PAPER

CHEMISTRY – (PART – E)

This part contains 3 Numerical Based Questions number 111 to 113. Each question has Single Digit Answer 0 to 9.

111. 1500 ml of an aqueous solution of sucrose contains 75g sucrose. What is mass by volume concentration of this solution?
112. Ternary solution has how many components
113. A sample of dye is separated by chromatography from the result shown in the diagram tell the dye contain how many components



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MATHEMATICS – (PART – F)

This part contains 3 Numerical Based Questions number 114 to 116. Each question has Single Digit Answer 0 to 9.

114. In a group of goats and hens, the total number of legs is 12 more than twice the total number of heads. The number of goats
115. Find the unit digit of the product $91 \times 92 \times 93 \times \dots \times 99$
116. If $(x-3)^2 + (y-4)^2 + (z-5)^2 = 0$, then the value of $\frac{x^2}{9} + \frac{y^2}{16} + \frac{z^2}{25}$ is

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FIITJEE Big Bang Edge Test - 2022

for students presently in **Class 9 (going to 10) (Paper 2)**

SAMPLE PAPER ANSWER KEY

1.	C	2.	D	3.	A	4.	B
5.	A	6.	A	7.	B	8.	B
9.	C	10.	C	11.	C	12.	D
13.	D	14.	D	15.	C	16.	C
17.	A	18.	A	19.	C	20.	B
21.	B	22.	A	23.	D	24.	B
25.	C	26.	B	27.	B	28.	B
29.	D	30.	D	31.	D	32.	C
33.	C	34.	C	35.	A	36.	D
37.	A	38.	C	39.	B	40.	B
41.	D	42.	B	43.	B	44.	A
45.	C	46.	A	47.	A	48.	D
49.	B	50.	A	51.	C	52.	A
53.	A	54.	A	55.	B	56.	B
57.	C	58.	D	59.	B	60.	C
61.	C	62.	D	63.	A	64.	D
65.	C	66.	C	67.	D	68.	D
69.	C	70.	A	71.	A	72.	A
73.	A	74.	B	75.	C	76.	D
77.	D	78.	A	79.	B	80.	D
81.	C	82.	B	83.	B	84.	C
85.	C	86.	D	87.	B	88.	A
89.	D	90.	A	91.	B	92.	C
93.	A	94.	C	95.	B	96.	B
97.	D	98.	A	99.	C	100.	A
101.	D	102.	A	103.	B	104.	B
105.	D	106.	D	107.	B	108.	1
109.	2	110.	5	111.	5	112.	3
113.	3	114.	6	115.	0	116.	3