FIITJEE Admission Test

for students presently in Class 8 (Paper 2)

Time: 3 Hours (2:00 pm – 5:00 pm) **CODE: 89-2** ***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:

⓪ ① ② ③ ④ ⑤ ● ⑦ ⑧ ⑨

Example 2:

If answer is 2.

Correct method:

⓪ ① ● ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Recommended Time: 55 Minutes for Section – I

Section – I

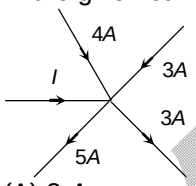
PHYSICS – (PART – A)

*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 possible reason for the increase in resistivity of most of the conductors with temperature is
(A) The mass of the electron changes with temperature
(B) The charge on each electron changes with temperature
(C) The electron density changes with temperature
(D) The time between collisions changes with temperature

2. The contact force exerted by a body A on another body B is equal to the normal force between the bodies. We conclude that -
(a) bodies may be rough
(b) force of friction between two bodies may be equal to zero
(c) magnitude of normal reaction is equal to that of friction
(d) the surfaces must be smooth
Choose correct option:
(A) b, d (B) a, b
(C) c, d (D) a, d

3. In the given current distribution what is the value of *I*



(A) 3 *A* (B) 1 *A*
(C) 2 *A* (D) 5 *A*

4. A block slides down a smooth fixed inclined plane when released from the top, while another falls freely from the same point. Which of the following is/are correct?
(A) Sliding block will reach the ground first
(B) Both the blocks will reach the ground with different speeds
(C) Both the blocks will reach the ground with same speed
(D) Both (A) and (C) are correct

Space for Rough Work

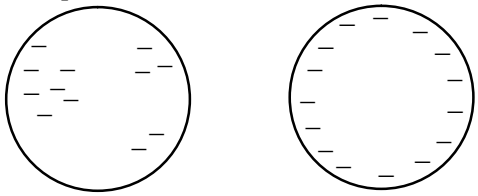
5. When electric current is passed through acidulated water, the gases produced are
(A) oxygen and hydrogen peroxide (B) hydrogen and ozone
(C) hydrogen and oxygen (D) all are correct

6. The atmosphere exerts a pressure of P on the surface of earth, then P equal :
(A) 1.01×10^5 Nm^{-2} (B) 1.01×10^{-5} Nm^{-2}
(C) 1.01×10^{7} Nm^{-2} (D) 1.01×10^{-7} Nm^{-2}

7. A batsman has a choice to use heavy or light bat, while facing a fast bowler. He will prefer :
(A) light bat, because handling it is easy (B) heavy bat, because it will recoilless
(C) heavy bat, so that he can handle firmly (D) none of the above.

8. One of these isolated charged spheres is metal and the other is rubber. The figure below depicts the distribution of excess negative charge over the surface of two spheres. From figure, we can conclude that

Sphere A Sphere B



(A) Sphere A is made of rubber, where B is metal
(B) Both the sphere made of metal
(C) Both the sphere made of rubber
(D) Sphere A is made of metal, where B is rubber

9. A force of 25 N is applied on a nail of area 0.001 sq. cm. Then the thrust is :
(A) 50 N (B) 100 N
(C) 0.05 N (D) 25 N

10. Brakes of very small contact area are not used although friction is independent of area, because friction
(A) Resists motion (B) Causes wear and tear
(C) Depends upon the nature of materials (D) Operating in this case is sliding friction

11. A person is standing in an elevator, in which situation he finds his weight greater than actual weight:
(A) The elevator moves upwards with constant velocity
(B) The elevator moves upwards with constant acceleration
(C) The elevator moves downwards with constant velocity
(D) The elevator moves upwards with constant acceleration

12. Unit of coefficient of friction is:
(A) dyne (B) Newton
(C) N/m^2 (D) None of these

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. Fires in underground coal mines usually occur due to
(A) Explosive combustion (B) Deliberate combustion
(C) Spontaneous combustion (D) Rapid combustion

14. Highest level of conductivity is expected by
(A) Gold (B) Silver
(C) Aluminum (D) None of these

15. Which of the following is not of petroleum origin?
(A) Petrol (B) Diesel
(C) Coke (D) LPG

16. Which fibre is having the highest strength?
(A) Cotton (B) Wool
(C) Silk (D) Nylon

17. Petroleum is also called
(A) American gold (B) Black gold
(C) Black diamond (D) American diamond

18. The affinity of CO for hemoglobin is how many times more than that of O_2?
(A) 500 times (B) 200 times
(C) 400 times (D) 300 times

19. Terylene is used in making:
(A) Shirts and other dresses (B) Nonstick coating
(C) In food packaging (D) None of these

Space for Rough Work

20. Symbolic name for Teflon is:
(A) PTFE (B) PCTFE
(C) PVC (D) None of these

21. When Zinc reacts with dilute sulphuric acid, a salt is formed with the release of a gas. The gas produced during this puts off of burning candle with a pop sound. The gas evolved during this reaction is:
(A) Sulphur dioxide (B) Oxygen
(C) Hydrogen (D) Hydrogen Sulphide

22. Which of the following groups contain only synthetic fibres?
(A) Nylon, Terylene, Wool (B) Cotton, Polycot, Rayon
(C) PVC, Polythene, Bakelite (D) Acrylic, Silk, Wool.

23. In India, which association advises people on saving petrol or diesel while driving?
(A) Petroleum Conservation Research Association (PCRA)
(B) Coal Conservation Research Association (CCRA)
(C) ECO-driving advice.
(D) Petroleum conservation association (PCA)

24. Which of the following Zones of the candle flame is blue.
(A) Outer, luminous zone (B) Inner, luminous zone
(C) Middle, non-luminous zone (D) All of the above.

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. If $2^x = 4^y = 8^z$ and xyz = 288 then $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{8z}$ is

(A) $\frac{7}{96}$ (B) $\frac{11}{96}$ (C) $\frac{13}{96}$ (D) $\frac{15}{96}$

26. The additive inverse of a number 'u' is a number 'v', then which of the following is correct ?

(A) u + v = 0 (B) u + v = 1 (C) $u = -\frac{1}{v}$ (D) u . v =1

27. A mixture contains alcohol and water in the ratio 8 :11. If 5 litres of water and 5 litres of Alcohol is added to the mixture, the ratio becomes 4 :5. The quantity of alcohol in the given mixture is

(A) 10 litres (B) 5 litres (C) 7.5 litres (D) 2.5 litres

28. Find the value of K.

$K = \sqrt[3]{24 + \sqrt[3]{24 + \sqrt[3]{24}}} \ldots\infty$

(A) 3 (B) 2 (C) 24 (D) 16

29. The rational number 0 is

(A) positive (B) negative (C) both (A) and (B) (D) none of these

30. If $2^p = 3^q = 6^r$, then find the value of $\frac{r(p+q)}{pq}$

(A) 0 (B) –1 (C) 1 (D) 2

31. $3.\overline{25}$ is equal to

(A) $\frac{325}{99}$ (B) $\frac{320}{99}$ (C) $\frac{322}{99}$ (D) $\frac{321}{99}$

Space for Rough Work

32. If $x = (7 + 4\sqrt{3})$, then $\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)$ is

(A) 4 (B) 5 (C) 6 (D) 7

33. The sum of two irrational numbers

(A) is always rational (B) is always irrational

(C) can be rational or irrational (D) is neither rational nor irrational

34. If $\frac{\sqrt{x}}{\sqrt{81}} = \frac{\sqrt[3]{x}}{\sqrt{27}}$, then x is

(A) $\sqrt{3}$ (B) 9 (C) $\sqrt[3]{3}$ (D) 27

35. The difference between the simple interest and compound interest on Rs 400 at 5% per annum for 2 years is

(A) Rs 1 (B) Rs 10

(C) Rs 12 (D) Rs15

36. If a:b=5:14 and b:c=7:3, find a:b:c

(A) 5:14:6 (B) 6:14:12 (C) 7:12:6 (D) 8:9:4

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. All mammalian cells have mitochondria except
(A) Neuron (B) Liver cells
(C) Mature RBC (D) Mature WBC

38. What does virus consists of
(A) proteins only (B) proteins and carbohydrates only
(C) DNA only (D) proteins and nucleic acid only

39. The vacuole is lined by a membrane called
(A) jacket (B) tonoplast
(C) tonoplasm (D) fret membrane

40. Bacterial cell wall is made up of
(A) Cellulose (B) Peptidoglycan
(C) Hemicellulose (D) Pectin

41. If the ribosomes of a cell are destroyed than
(A) respiration will not take place (B) fats will not be stored
(C) proteins will not be formed (D) carbon assimilation will not occur

42. The proteins and lipids, essential for building the cell membrane, are manufactured by
(A) endoplasmic reticulum (B) Golgi apparatus
(C) mitochondria (D) peroxisomes

43. Select the odd one out.
(A) Amoeba (B) Euglena
(C) Paramecium (D) Hydra

44. Yellow revolution is
(A) Oil seeds (B) Pulses
(C) Milk (D) Jute

Space for Rough Work

45. Identify the wrong statement
(A) Fertilizers add humus to the soil
(B) Manure provides all primary nutrients
(C) Long-term use of fertilizer reduces soil fertility
(D) Crop rotation avoids depletion of a particular nutrient from the soil

46. Match the following:

(a) Yeast		(i) *Hydra*
(b) *Amoeba*		(ii) Budding
(c) Budding		(iii) Starfish
(d) Fragmentation		(iv) Binary fission

	(a)	(b)	(c)	(d)
(A)	iv	ii	i	iii
(B)	ii	iv	iii	i
(C)	iv	ii	iii	i
(D)	ii	iv	I	iii

47. Which of the following can change its shape?
(i) *Amoeba* (ii) Neuron (iii) WBC (iv) RBC
(A) (i) only (B) (i) and (ii)
(C) (i) and (iii) (D) (i), (ii), (iv)

48. A scientist associated with Small Pox vaccine is
(A) Brown (B) Edward Jenner
(C) Leeuwenhoek (D) Koch

Space for Rough Work

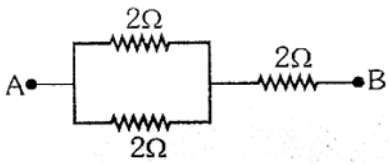
Recommended Time: 45 Minutes for Section – II

Section – II

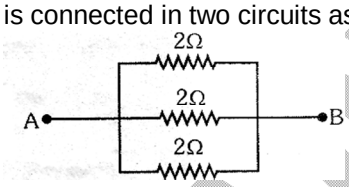
PHYSICS – (PART – A)

*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. Three identical resistances of 2 ohm is connected in two circuits as shown in figure



(I)



(II)

The ratio of equivalent resistances in two cases are $R_I : R_{II}$

(A) 9:2 (B) 3: 2

(C) 2: 9 (D) 2:3

50. Find the limiting force of friction between an iron block and surface, if coefficient of friction between block and surface is 0.08 and the mass of block is 60 kg (if g = 10 m/s^2)

(A) 480 N (B) 48 N

(C) 4.80 N (D) 60 N

51. Adding a soluble metallic salt to water

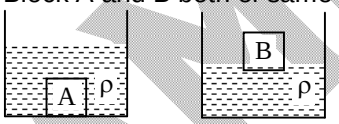
(A) Increases its electrical conductivity

(B) decreases its electrical conductivity

(C) never produces any change in the conductivity

(D) none of these

52. Block A and B both of same volume are placed in a same fluid then which of the following is true.



(A) Density of A = Density of B (B) Density of A > Density of B

(C) Density of A < Density of B (D) None of these

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 is not a byproduct of destructive distillation of coal?
(A) Paraffin wax (B) Bitumen
(C) Coal gas (D) Both (A) and (B)

54. The outermost zone of a candle flame is the:
(A) Least hot part (B) Moderately hot part
(C) Hottest part (D) None of these

55. Charcoal is prepared from wood, in a closed vessel by :
(A) Strong heating, in presence of air (B) Strong heating in absence of air
(C) Cooling in absence of air (D) Cooling in presence of air

56. Metals like zinc and Aluminium react with Sodium hydroxide to produce which gas.
(A) Hydrogen (B) Hydrogen Sulphide
(C) Oxygen (D) Sulphur dioxide

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. A single discount equal to a discount series of 10% and 20% is:
(A) 25% (B) 28% (C) 30% (D) 35%

58. ABCD is a rhombus with $\angle ABC = 56^o$, then the $\angle ACD$ will be:
(A) 56^o (B) 62^o (C) 124^o (D) 34^o

59. Factorize the expression $\frac{p^2}{4} + \frac{q^2}{9} + 36 + \frac{pq}{3} + 4q + 6p$,
(A) $\left(\frac{p}{2} + \frac{q}{3} + 6\right)\left(\frac{p}{2} + \frac{q}{3} + 6\right)$ (B) $\left(\frac{p}{2} - \frac{q}{3} + 6\right)\left(\frac{p}{2} - \frac{q}{3} + 6\right)$
(C) $\left(\frac{p}{2} + \frac{q}{3} - 6\right)\left(\frac{p}{2} + \frac{q}{3} - 6\right)$ (D) $\left(\frac{p}{2} + \frac{q}{3} - 6\right)\left(\frac{p}{2} - \frac{q}{3} - 6\right)$

60. $\frac{3^{2001} + 3^{1999}}{3^{2001} - 3^{1998}} = ?$
(A) $\frac{15}{13}$ (B) 3 (C) $\frac{10}{9}$ (D) $\frac{1}{3}$

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. The Gram's stain used to stain bacteria is
(A) safranin and iodine (B) cotton blue and iodine
(C) crystal Violet and iodine (D) crystal Violet and cotton blue

62. Which of the following statement is correct
(A) silver revolution is meant for increase in fish production
(B) the science of improving crop varieties is called plant breeding
(C) blue revolution is meant for increase in pulse production
(D) white revolution is associated with increase in milk production

63. Which one of the following pairs is wrongly matched?
(A) Coliforms – Vinegar
(B) Yeast – Ethanol
(C) Methanogens – Gobar gas
(D) Streptomyces – Antibiotic

64. The antibiotic penicillin was discovered by
(A) Sir Alexander Fleming (B) Ernst Boris Chain
(C) Robert Hooke (D) Howard Florey

65. Which of the following statements is wrong?
(A) Vacuoles are either absent or small in animal cells
(B) Centrosomes are absent in animal cells
(C) Centrosomes are absent in plant cells
(D) Centrosomes help in cell division

66. Who proposed 'Omnis cellula e cellula'?
(A) Gregor Mendel (B) Robert Hooke
(C) Purkinje (D) R. Virchow

67. Mitochondria is the site of
(A) Anaerobic respiration (B) Trapping of sunlight
(C) Kreb cycle (D) Calvin cycle

68. Bacteriophage is the name given to
(A) an organelle of a bacterium
(B) a virus that infects a bacterium
(C) a bacterium that infects higher plant cell
(D) a bacterium which infects an animal cell

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. In a conductor 4 *coulombs* of charge flows for 2 *seconds*. The value of electric current will be
(A) 4 *volts* (B) 4 *amperes*
(C) 2 *amperes* (D) 2 *volts*

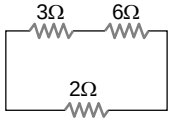
70. A student has 10 resistors of resistance '*r*'. The minimum resistance made by him from given resistors is
(A) 10 *r* (B) $\frac{r}{10}$
(C) $\frac{r}{100}$ (D) $\frac{r}{5}$

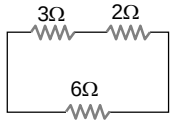
71. A rectangular block is 3 *cm* × 3 *cm* × 6*cm* in size. The block is floating in water with 3 *cm* side vertical. If it floats with 6 *cm* side vertical, what change will occur in the level of water?
(A) No change
(B) It will rise
(C) It will fall
(D) It may rise or fall depending on the density of block

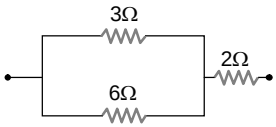
72. Which of the following terms does not represent electrical power in a circuit :
(A) I^2R (B) IR^2
(C) VI (D) V^2/R

Space for Rough Work

73. If you are provided three resistances 2 Ω, 3 Ω and 6 Ω. How will you connect them so as to obtain the equivalent resistance of 4 Ω ?

(A) 

(B) 

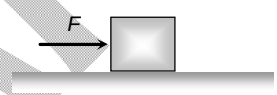
(C) 

(D) None of these

74. Archimedes principle is used to :
(A) design Submarines (B) design ships
(C) design Lactometers (D) all of them

75. When a bus suddenly takes a turn, the passengers are thrown outwards because of
(A) Speed of motion (B) Inertia of motion
(C) Acceleration of motion (D) Both (B) and (C) are correct

76. A block of mass 2 *kg* is kept on the floor. The coefficient of static friction is 0.4. If a force *F* of 4.5 *N* is applied on the block as shown in the figure, the frictional force between the block and the floor will be



(A) 4.5 *N*
(B) 5 *N*
(C) 7.84 *N*
(D) 10 *N*

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. Match the column-I with column-II

Column-I	Column-II
I. Bituminous	p. Petroleum product
II. Paraffin wax	q. Inexhaustible resource
III. Sunlight	r. Type of coal
IV. Naphthalene	s. Fractional distillation of coal tar.

(A) I-r, II-p, III-q, IV-s
(B) I-p, II-r, III-q, IV-s
(C) I-q, II-s, III-p, IV-r
(D) I-S, II-q, III-q, IV-p

78. The calorific value of a fuel is 40,000 kJ/Kg. This fuel is most likely to be:
(A) Biogas
(B) Methane
(C) Hydrogen gas
(D) Liquefied petroleum gas

79. Supersonic jets causes pollution by thinning of:
(A) CO_2 layer
(B) SO_2 layer
(C) O_2 layer
(D) O_3 layer

80. Froth floatation process is based on
(A) Specific gravity of the ore particles
(B) Magnetic properties of the ore particles
(C) Wetting properties of the ore particles
(D) Electrical properties of the ore particles.

Space for Rough Work

81. Arrange the metals A, B and C in order of decreasing reactivity keeping in view the following reactions.

$A + BSO_4 \rightarrow ASO_4 + B$

$B + 2CNO_3 \rightarrow B(NO_3)_2 + 2C$

$A + C_2O \rightarrow AO + 2C$

(A) B > C > A (B) B > A > C
(C) A > C > B (D) A > B > C

82. Which one of the following is an example of thermoplastic?
(A) Polythene (B) PVC
(C) Bakelite (D) Both (A) and (B)

83. Identify the type of plastic that can best be used to make electrical switches.
(A) PVC (B) Polythene
(C) PET (D) Bakelite

84. The slow process of conversion of dead Vegetation into Coal is called.
(A) Decomposition (B) Evaporaiton
(C) Corbonification (D) Carbonisation

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 prickly pear weed (*Opuntia*) menace has been successfully controlled by:
(A) Cattle (B) DDT spray
(C) Cochineal insects (D) Destroying its seeds

86. Adjacent plant cells are joined together by
(A) Middle lamella (B) Plasmodesmata
(C) Mesosomes (D) Plasma membrane

87. *Amoeba* acquires its food through a process termed as:
(A) exocytosis (B) endocytosis
(C) plasmolysis (D) exocytosis and endocytosis both

88. **Assertion (A):** Immunity to chickenpox is considered as acquired immunity.
Reason (R): Immunity that is inherited from parents is considered as acquired immunity.
(A) Both A and R are true and R is the correct explanation for A.
(B) Both A and R are true and R is not the correct explanation for A.
(C) A is true and R is false.
(D) A is false and R is true.

89. Plasmolysis in a plant cell is defined as
(A) Break down of plasma membrane in hypotonic medium
(B) Shrinkage of cytoplasm in hypertonic medium
(C) Shrinkage of protoplasm
(D) None of these

Space for Rough Work

90. Sedimentation coefficient in case of ribosomes of plastids is
(A) 70S (B) 80S
(C) 50S (D) 20 S

91. Natasha put a plant cell and an animal cell of similar size in two similar dishes containing the same amount of water overnight. The next day, she observed the cells under the microscope and noticed that the animal cell has burst and the plant cell looked more bloated. She drew the following conclusions:
(i) The animal cell has only a thin layer of cell membrane. When too much water enters in it, it bursts.
(ii) Plant cell has cell wall made up of cellulose which is very strong material and prevents the cell from bursting
(iii) The plant cell contains vacuole and therefore can absorb more water
(iv) The animal cell does not possess vacuole.
Which of the above given conclusion are correct?
(A) i and ii (B) iii and iv
(C) i, ii and iii (D) All of these

92. Tobacco Mosaic virus consists of:
(A) cell membrane and chromosome (B) protein coat and DNA
(C) protein coat and RNA (D) lipid coat, genes and ribosomes

Space for Rough Work

Recommended Time: 40 Minutes for Section – IV

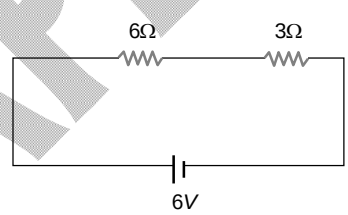
Section – IV

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. Formula for the mass of liquid will be
(A) M = ρ/V, where ρ is density and V is volume
(B) M = ρV, where ρ is density and V is volume
(C) M = ρ+V, where ρ is density and V is volume
(D) M = V/ρ, where ρ is density and V is volume

94. In the given circuit current through 3Ω resistance is (in Ampere)



(A) 1 (B) $\frac{1}{2}$

(C) $\frac{2}{3}$ (D) $\frac{3}{2}$

95. Mass of an object is :
(A) measure of gravitational pull (B) same as weight of an object
(C) amount of matter present in the object (D) none of these

96. A body held completely immersed inside a liquid experience two forces F_1 and F_2, where F_1 is the force due to gravity and F_2 is the buoyant force on it. Select correct option
(A) The body floats if F_1 is lesser than F_2
(B) The body floats if F_1 is equal to F_2
(C) The body sinks if F_1 is greater than F_2
(D) All are correct

97. Two blocks one of aluminium and other one is of iron has same mass then:
(A) inertia of iron is greater than aluminium (B) both the ball have same inertia
(C) inertia of iron is less than that on Aluminium (D) none of these

Space for Rough Work

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. Brass is an alloy of
(A) Cu, Zn (B) Zn, Sn
(C) Sn, Cu (D) None of these

99. Petrochemicals are obtained from.
(A) Petrol and diesel (B) CNG and LPG
(C) Coal & petroleum (D) Rocks and minerals

100. Which of the following substances has the lowest ignition temperature?
(A) Kerosene (B) Spirit
(C) Diesel (D) Coal

101. Silicon is very well known for its
(A) super conductivity (B) Good conductivity
(C) Semi-conductivity (D) Poor conductivity.

102. Metals, except Al and Zn, react with oxygen to from _____ oxides.
(A) Acidic (B) Neutral
(C) Amphoteric (D) Basic

Space for Rough Work

MATHEMATICS – (PART – C)

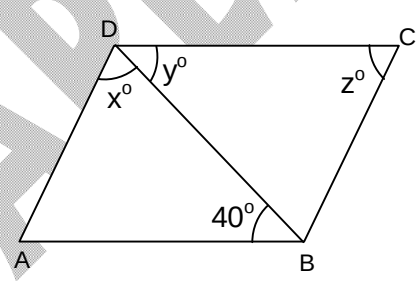
*This part contains **5 Multiple Choice Questions** number **103 to 107.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

103. Four identical small rectangles are put together to form a large rectangle as shown. The length of the shorter side of the large rectangle is 10 cm. What is the length of the longer side of the large rectangle?

(A) 10 cm (B) 20 cm
(C) 30 cm (D) 40 cm

104. If $x = 5, y = 3$ and $z = 2$, then value of $x^2 + y^2 + z^2 - 2xy + 2yz - 2zx$ is:
(A) 125 (B) 0 (C) –25 (D) 10

105. In the figure $AB \| DC$, if $x = \frac{4}{3}y,\ y = \frac{3}{8}z$ find $\angle BAD$



(A) 86.67^o
(B) 82.67^o
(C) 45^o
(D) 98.27^o

106. If each exterior angle of a regular polygon is 45^o then it is a
(A) Pentagon (B) Octagon (C) Hexagon (D) decagon

107. The cost price of 9 articles is equal to the selling price of 10 articles. Find the loss percent
(A) $11\frac{1}{9}\%$ (B) 11 % (C) $12\frac{1}{9}\%$ (D) 10 %

Space for Rough Work

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 3V battery is connected across a $5\,\Omega$ resistance. Calculate the heat produced in 5 seconds.

109. A mass m_1 is subjected to a force of 5 N, produces an acceleration of 8 m s^{-2} and for mass m_2 same force accelerate it with an acceleration of 24 m s^{-2}. What acceleration would it given if both the mass are tied together ?

110. The pressure of water on the ground floor is 50,000 Pa and at first floor is 10,000 Pa. Find the height of the first floor (in metre). (Take: density of water = 1000 kg m^{-3}, g = 10 m s^{-2})

Space for Rough Work

CHEMISTRY – (PART – E)

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

111. A hydrocarbon alkane CxHy on combustion gives 3 moles of CO_2 and 4 moles of H_2O. Calculate the value of (y-x) .

112. In Gypsum $CaSO_4.xH_2O$ what is the value of X.

113. In the given elements how many of them are semi-metals
C, SI, P, Ge, As, S, Cl, Sb, Ne

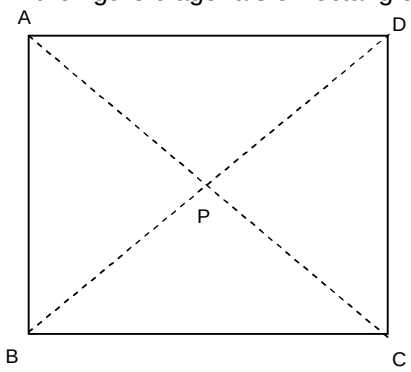
Space for Rough Work

MATHEMATICS – (PART – F)

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

114. What number must be added to each of the numbers 6, 15, 20, 43 to make four number proportional ?

115. In the figure diagonals of rectangle meet at P. If AP = 4x + 2 and BP = x + 8 then find x



116. If $a + b + c = 6$ and $a^2 + b^2 + c^2 = 26$, then find the value of $ab + bc + ca$.

Space for Rough Work

FIITJEE Admission Test

for students presently in Class 8 (Paper 2)

SAMPLE PAPER ANSWER KEY

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