

# FIITJEE SAMPLE PAPER – 2018

## (Big Bang Edge Test / Talent Recognition Exam)

for students presently in  
**Class 9 (Paper 1)**

Time: 3 Hours (9:30 am – 12:30 pm)

**Code 9000**

Maximum Marks: 210

### 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 60 Minutes on Section-I, 60 Minutes on Section-II and 60 Minutes on Section-III.
2. This Question paper consists of 3 sections. Marking scheme is given in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			correct answer	wrong answer
SECTION – I	APTITUDE	1 to 30	+3	0
SECTION – II	PHYSICS (PART-A)	31 to 39	+2	0
	CHEMISTRY (PART-B)	40 to 48	+2	0
	MATHEMATICS (PART-C)	49 to 57	+2	0
	BIOLOGY (PART-D)	58 to 66	+2	0
SECTION – III	PHYSICS (PART-A)	67 to 78	+1	0
	CHEMISTRY (PART-B)	79 to 90	+1	0
	MATHEMATICS (PART-C)	91 to 102	+1	0
	BIOLOGY (PART-D)	103 to 114	+1	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 at the bottom of this sheet.

**Note:** Please check this Question Paper contains all **114** 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 :** \_\_\_\_\_

## Recommended Time: 60 Minutes for Section - I

### Section - I

## APTITUDE TEST

*This section contains 30 Multiple Choice Questions number 1 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.*

**Directions (Q. 1 to 3):** In each of the following questions, a number/letter series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

1. Z, W, S, N, ?  
(A) P (B) O  
(C) H (D) Q
2. bdf, hjl, ?, tvx.  
(A) nrp (B) pnr  
(C) nqr (D) npr
3. 9, 10, 14, 23, 39, ?  
(A) 64 (B) 49  
(C) 63 (D) 59
4. Find out how many such pairs of letters are there in the given word each of which has as many letters between them in the word as in the English alphabet.  
**ADEQUATELY**  
(A) One (B) Two  
(C) Three (D) Four

*Space for Rough Work*

**Directions (Q. 5 to 6):** Read the passage below and solve the questions based on it.

Three different faces of a cube are coloured in three different colours – Red, Yellow and Orange. This cube is now cut into 216 smaller but identical cubes.

5. What is the least number of the smaller cubes that will have exactly three faces coloured?  
 (A) 0 (B) 6  
 (C) 2 (D) None of these
6. How many smaller cubes have exactly two face coloured?  
 (A) 12 (B) 15  
 (C) 16 (D) cannot be determined
7. 'Melt' is related to 'Liquid' in the same way as 'Freeze' is related to  
 (A) Ice (B) Crystal  
 (C) Water (D) Cubes
8. A word is given in capital letters. It is followed by four words. Out of these four words, three cannot be formed from the letters of the word in capital letters. Point out the word which can be formed from the letters of the given word in capital letters.  
 PHILANTHROPIST  
 (A) FIST (B) LARK  
 (C) HYPOCRISY (D) PISTON
9. Choose the pair/group of words that show the same relationship as given at the top of every pair/group.  
**Water : Swim**  
 (A) Graze : Grass (B) Plan : Implement  
 (C) Flood : Damage (D) Ground : Play
10. If  $A + B$  means A is wife of B;  $A - B$  means A is son of B; and  $A = B$  means A is sister of B. Following this relationship, Pankaj – Rajinder = Rahul will certainly mean all of these except  
 (A) Rajinder is a lady (B) Pankaj is son of Rajinder  
 (C) Rahul is father of Pankaj (D) None of these
11. Four pairs of words are given out of which the words in three pairs bear a certain common relationship. Choose the pair in which the words are differently related.  
 (A) Bouquet : Flowers (B) Bunch : Grapes  
 (C) Furniture : Chair (D) Album : Photos

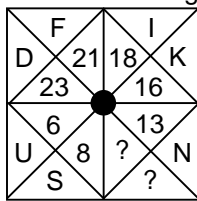
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**Space for Rough Work**

**Directions (Q. 12 to 13):** According to a certain code,

- (i) 'min fin bin gin' means 'trains are always late';
- (ii) 'gin din cin hin' means 'drivers were always punished';
- (iii) 'min cin vin rin' means 'drivers stopped all trains'; and
- (iv) 'din kin fin vin' means 'all passengers were late'.

12. 'Drivers were late' would be written as  
 (A) min cin din (B) fin cin din  
 (C) fin din gin (D) gin hin min
13. Which word is represented by 'vin'?  
 (A) all (B) late  
 (C) trains (D) drivers
14. Seeta and Ram both start from a point towards North. Seeta turns to left after walking 10 km. Ram turns to right after walking the same distance. Seeta waits for some time and then walks another 5 km, whereas Ram walks only 3 km. They both then turn to South and walk 15 km forward. How far is Seeta from Ram?  
 (A) 15 km (B) 10 km  
 (C) 8 km (D) 12 km
15. X is three times as old as Y, Z was twice as old as X four years ago. In four years time, X will be of 31 years. What is the present age of Y and Z?  
 (A) 9 years, 46 years (B) 9 years, 50 years  
 (C) 10 years, 46 years (D) 10 years, 50 years
16. Find the missing term in the following figures.



- (A)  $\frac{9}{R}$  (B)  $\frac{11}{P}$   
 (C)  $\frac{13}{Q}$  (D)  $\frac{10}{W}$

**Space for Rough Work**

**Directions (Q. 17 to 19):** Read the following information carefully and answer the following questions. Seven persons A, B, C, D, E, F and G were born on different months viz. January, February, March, April, June, August and October of the same year but not necessarily same order. Only three persons were born before E and D is not one of them. F was not born immediately after E. B was born after F. A was born immediately before the month in which G was born. Only two persons were born between G and F.

17. How many persons were born between C and E?  
 (A) Three (B) Two  
 (C) Four (D) Five
18. Who amongst the following is the oldest?  
 (A) A (B) C  
 (C) E (D) B
19. Who amongst the following was born between the months in which A and D were born?  
 (A) F (B) G  
 (C) C (D) B

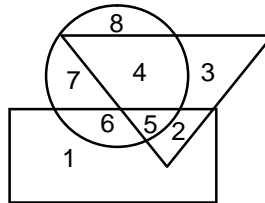
**Directions (Q. 20 to 22):** Seven persons A, B, C, D, E, F and G are sitting in a circle. Five of them are facing the centre while two of them are facing opposite to the centre. C sits third to the left of D and both are facing the centre. E is neither an immediate neighbour of D nor of C. The one sitting exactly between D and F is facing opposite to the centre. G sits third to the right of A and G is facing the centre. One of B's neighbours is facing opposite to the centre.

20. Which of the following pairs represents persons facing opposite to the centre.  
 (A) A and F (B) E and F  
 (C) A and E (D) None of these
21. Who is sitting to the left of A?  
 (A) C (B) G  
 (C) E (D) D
22. Who is sitting to the left of E?  
 (A) C (B) G  
 (C) B (D) A
23. Six friends are sitting in a circle and playing cards. Kenny is to the left of Danny. Michael is in between Bobby and Johnny, Roger is in between Kenny and Bobby. Who is sitting to the right of Michael?  
 (A) Danny (B) Johnny  
 (C) Kenny (D) Bobby

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**Space for Rough Work**

**Directions (Q. 24 to 25):** In the following questions, answers are to be based on the diagram given below, where the triangle represents doctors, the circle represents players and the rectangle represent artists.



24. Which number represents artists who are also players only?  
 (A) 4 (B) 6  
 (C) 7 (D) 8
25. Which number represents doctors who are neither players nor artists?  
 (A) 2 (B) 3  
 (C) 4 (D) 5

**Directions (Q. 26 to 30):** Study the following information carefully and answer the questions given below: M, D, P, K, R, T and W are sitting around a circle facing the centre. D is second to the right of P, who is third to the right of K. T is third to the right of W, who is not an immediate neighbour of D. M is third to the left of R.

26. Who is second to the right of T?  
 (A) D (B) K  
 (C) M (D) R
27. In which of the following pairs is the second person sitting to the immediate right of first person?  
 (A) DT (B) TP  
 (C) PR (D) KW
28. Who is on the immediate left of R?  
 (A) W (B) P  
 (C) K (D) T
29. Who is on the immediate left of M?  
 (A) K (B) W  
 (C) D (D) T
30. Who is third to the left of D?  
 (A) W (B) P  
 (C) K (D) R

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*Space for Rough Work*

**Recommended Time: 60 Minutes for Section – II****Section – II****PHYSICS – (PART – A)**

*This part contains 9 Multiple Choice Questions number 31 to 39. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.*

31. Which pair among these will have same S.I unit  
(A) Velocity and distance (B) Speed and displacement  
(C) Distance and displacement (D) Acceleration and velocity
32. If a particular body revolves along a circle with uniform speed then the motion of the particle is  
(A) Oscillatory (B) Three dimensional  
(C) Two dimensional (D) One dimensional
33. The S.I unit of universal gravitational constant is  
(A)  $\frac{\text{kgm}}{\text{s}}$  (B) kgm  
(C) Ns (D)  $\frac{\text{Nm}^2}{\text{kg}^2}$
34. What is the magnitude of linear momentum of a body moving with velocity 100 m/s having mass of 100 gram?  
(A) 20 kg m/s (B) 40 kg m/s  
(C)  $\frac{1}{10}$  kg m / s (D) 10 kg m/s
35. A particle moves along a circular track of 6 m radius such that the arc of the circular track covered subtends an angle of  $90^\circ$  at the centre. Find the distance covered by the body  
(A)  $3\pi$  meter (B)  $4\pi$  meter  
(C)  $6\pi$  meter (D)  $10\pi$  meter

**Space for Rough Work**

36. The unit of Impulse is  
(A)  $\frac{N}{m}$  (B) N.m  
(C) N.s (D) N.kg
37. A certain body on ground is thrown vertically upward with a velocity of 50 m/s then the time of flight of a body neglecting the air resistance is ( $g = 10 \text{ m/s}^2$ )  
(A) 5 s (B) 10 s  
(C) 6 s (D) 2 s
38. A body moves along a straight line travels 16 m in the 1<sup>st</sup> second, 9 m in the next one second and 20 m in the 3<sup>rd</sup> one second, then the average velocity of the body for the first three second is  
(A) 10 m/s (B) 30 m/s  
(C) 90 m/s (D) 15 m/s
39. A body is thrown horizontally with the speed of 10 m/s from the top of the building having height 20 m, then the time it will take to reach the ground while neglecting air friction is  
(Take  $g = 10 \text{ m/s}^2$ )  
(A) 2 s (B) 10 s  
(C) 3 s (D) 7 s

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*Space for Rough Work*



## CHEMISTRY – (PART – B)

This part contains 9 Multiple Choice Questions number 40 to 48. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

40. Normal boiling point of a liquid is that temperature at which vapour pressure of the liquid is equal to:  
(A) Zero (B) 380mm of Hg  
(C) 760mm of Hg (D) 100mm of Hg
41. The phenomenon of spreading of ink in water is called :  
(A) Evaporation (B) Diffusion  
(C) Solubility (D) Respiration
42. The correct order of diffusion for the gases  $H_2$ ,  $O_2$ ,  $N_2$  and  $NH_3$  is  
(A)  $H_2 > N_2 > O_2 > NH_3$  (B)  $NH_3 > O_2 > N_2 > H_2$   
(C)  $H_2 > N_2 > NH_3 > O_2$  (D)  $H_2 > NH_3 > N_2 > O_2$
43. The element which is a liquid above  $30^\circ C$ , is :  
(A) Cesium (B) Lithium  
(C) Sodium (D) Magnesium
44. Separating funnel is useful in separating the following :  
(A) Miscible liquids with same density (B) Miscible liquids with same colour  
(C) Miscible liquids with variable density (D) Immiscible liquids with variable density
45. Our hand feels cold when we put some acetone on it, because  
(A) Heat of vaporization of acetone is exothermic process  
(B) Acetone release heat of vaporization on our hand  
(C) Acetone absorb latent heat of vaporization from our hand  
(D) Acetone become cooled
46. Which of the following conditions increase the evaporation of a liquid?  
(A) High temperature (B) Large surface area  
(C) Removal of vapours from the system (D) All are correct
47. Which of the following conditions would increase the interparticle distance of a gas?  
(i) Increase of pressure (ii) Leaking of some of the gas  
(iii) Increase the volume of container (iv) Increase the temperature of the gas  
(A) i & ii (B) ii, iii & iv  
(C) i & iii (D) ii, iv
48. 15g of methyl alcohol is present in 100 ml of solution. If the density of solution is 0.96 g/ml, calculate the mass percentage of methyl alcohol in solution.  
(A) 15.625% (B) 25.625%  
(C) 45.625% (D) 35.625%

Space for Rough Work

## MATHEMATICS – (PART – C)

This part contains **9 Multiple Choice Questions** number **49 to 57**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

49.  $0.\overline{37}$  is equivalent to

(A)  $\frac{37}{198}$

(B)  $\frac{55}{67}$

(C)  $\frac{37}{99}$

(D) none of these

50. If the number  $12x453$  is divisible by 9, then the digit at the place of  $x$  is

(A) 1

(B) 2

(C) 3

(D) 4

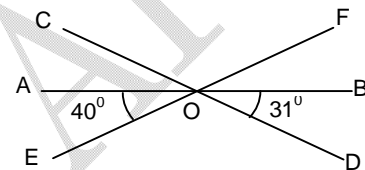
51. In the following figure, if AB, CD and EF are straight lines, find  $\angle BOC$ :

(A)  $109^\circ$

(B)  $149^\circ$

(C)  $71^\circ$

(D)  $140^\circ$



52. If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 2:3, then the smaller of two angles is:

(A)  $72^\circ$

(B)  $108^\circ$

(C)  $54^\circ$

(D)  $36^\circ$

53. The lowest term of  $\frac{(x^2 - 1)(x + 2)(x^2 - x - 72)}{(x - 9)(x + 1)}$  is

(A)  $(x + 1)(x - 2)(x + 8)$

(B)  $(x - 1)(x + 2)(x + 8)$

(C)  $(x - 1)(x - 2)(x + 8)$

(D)  $(x - 1)(x + 2)(x - 8)$

**Space for Rough Work**

54. Find the length of the diagonal of a square with an area of  $16 \text{ cm}^2$ .  
 (A) 2 cm (B) 4 cm  
 (C)  $\sqrt{2}$  cm (D)  $4\sqrt{2}$  cm
55. The polynomials  $ax^3 + 3x^2 - 13$  and  $2x^3 - 5x + a$  are divided by  $x + 2$ . If remainder in each case is the same, the value of  $a$  is  
 (A)  $\frac{4}{9}$  (B)  $\frac{7}{9}$   
 (C)  $\frac{2}{9}$  (D)  $\frac{5}{9}$
56. Find the LCM of the polynomials:  
 $90(x^2 - 5x + 6)(2x + 1)^2$  and  $140(x - 3)^3(2x^2 + 15x + 7)$ .  
 (A)  $1260(x - 2)(x - 3)^3(2x + 1)^2(x + 7)$  (B)  $1260(x - 2)(x + 2)^3(2x + 1)^2(x + 7)$   
 (C)  $1260(x - 2)(x - 3)^3(2x + 1)^2(x - 7)$  (D)  $1260(x - 2)(x - 3)^3(2x - 1)^2(x + 7)$
57. The height of an equilateral triangle is 6 cm. Its area is:  
 (A)  $12\sqrt{3} \text{ cm}^2$  (B)  $6\sqrt{3} \text{ cm}^2$   
 (C)  $15\sqrt{6} \text{ cm}^2$  (D)  $18 \text{ cm}^2$

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*Space for Rough Work*

## BIOLOGY – (PART – D)

This part contains **9 Multiple Choice Questions** number **58 to 66**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

58. The plasma membrane consists mainly of  
(A) Proteins embedded in a carbohydrate bilayer  
(B) Phospholipids embedded in a protein bilayer  
(C) Proteins embedded in a phospholipid bilayer  
(D) Proteins embedded in a polymer of glucose molecules
59. The suffix 'S' in ribosome sub-unit indicates  
(A) Solubility  
(B) Sedimentation coefficient  
(C) Surface Area  
(D) Size
60. Which of the following structures is usually present only in animal cells?  
(A) Vacuole  
(B) Cell wall  
(C) Nucleus  
(D) Centrioles
61. Identify this tissue. It has tight fitting, single layer, flattened cells.  
(A) Simple squamous epithelium  
(B) Ciliated epithelium  
(C) Striated connective tissue  
(D) Columnar cardiac cells
62. The tissue that has central nucleus, tapered at both ends and controls movement that are not under conscious control is:  
(A) Striated muscle  
(B) Unstriated muscle  
(C) Cardiac muscle  
(D) Skeletal muscle
63. Mark the incorrect statement:  
(A) As DO increases, BOD decreases  
(B) Soil erosion can be prevented by terrace farming  
(C) In a natural ecosystem, decomposers include bacteria and fungi  
(D) Green House Effect is caused by green plants in atmosphere
64. All of the earth's water, land and atmosphere, within which life exists is known as:  
(A) a population  
(B) a community  
(C) a biome  
(D) the biosphere
65. A measure of the acidity or alkalinity of the soil is called?  
(A) Leaching  
(B) Soil test  
(C) Soil pH  
(D) None of these
66. Where did the Jersey Breed originate?  
(A) The Isle of Jersey  
(B) Wales  
(C) England  
(D) France

**Space for Rough Work**

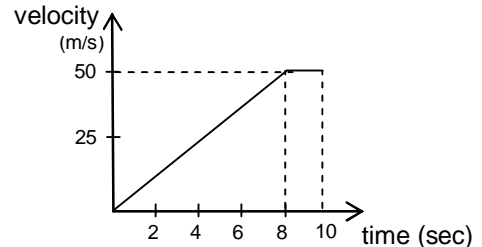
## Recommended Time: 60 Minutes for Section – III

### Section – III

### PHYSICS – (PART – A)

This part contains **12 Multiple Choice Questions** number **67 to 78**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

67. A train covers the first half of the distance between two station at a speed of 10 m/sec and the other half at 40 m/sec. Then its average speed for the journey is :  
 (A) 50 m/sec (B) 16 m/sec  
 (C) 30 m/sec (D) 100 m/sec
68. A person moves 10 m south and then 10 m towards east and finally  $10\sqrt{2}$  m in north-west direction. The displacement of the person for the entire journey is :  
 (A) 10 m along north (B) 10 m along east  
 (C) 10 m along west (D) zero
69. Two boys start running towards each other from two points, they are 300 m apart. One runs with a speed of 10 m/s and other with a speed of 20 m/s. When and where do they meet each other from the initial position of the boy moving with the speed of 10 m/s:  
 (A) 10 s, 100 m (B) 10 s, 80 m  
 (C) 12 s, 150 m (D) 15 s, 90 m
70. The variation of velocity of a particle moving along a straight line is shown in the figure. The displacement travelled by the particle in 10 s is:  
 (A) 300 m  
 (B) 200 m  
 (C) 150 m  
 (D) 600 m



*Space for Rough Work*

71. A body is thrown vertically upward with velocity 4 m/s from ground, the displacement of the body at the end of 0.8 seconds neglecting air friction is (Take  $g = 10 \text{ m/s}^2$ ).
- (A) 1 m (B) 0.8 m  
(C) 0 (D) 2 m
72. A ball of mass 10 kg moving with velocity 20 m/s collides elastically with wall and rebound with the same speed. Then the magnitude of change in momentum of the ball will be :
- (A) Zero (B) 300 kg m/s  
(C) 400 kg m/s (D) 100 kg m/s
73. The two ends of a spring-balance are pulled each by a force of 80 kg wt. What will be the reading of the spring balance?
- (A) 20 kg wt. (B) 0 kg wt.  
(C) 80 kg wt. (D) 40 kg wt.
74. A gun fires a bullet of mass 100 g with a velocity of  $100 \text{ m s}^{-1}$  because of which the gun recoils with a speed of  $10 \text{ m s}^{-1}$ . Find the mass of the gun.
- (A) 1 kg (B) 4.5 kg  
(C) 1.5 kg (D) 6 kg
75. If  $g$  is the acceleration due to gravity on the surface of earth, its value at a height equal to triple the radius of earth is (Assuming the Earth to be perfect sphere)
- (A)  $g$  (B)  $g/2$   
(C)  $g/3$  (D)  $g/16$
76. The weight of an object in the deep coal mine, at sea level, and at the top of the mountain are  $W_1$ ,  $W_2$  and  $W_3$  respectively, then
- (A)  $W_1 < W_2 > W_3$  (B)  $W_1 = W_2 = W_3$   
(C)  $W_1 < W_2 < W_3$  (D)  $W_1 > W_2 > W_3$
77. If a horizontal force of 10 N acts on the 2 kg body at rest placed on a smooth horizontal surface, then the velocity of the body at the end of 3 sec is
- (A) 5 m/s (B) 10 m/s  
(C) 20 m/s (D) 15 m/s
78. A revolving satellite A of mass  $m$  is at a distance of  $r$  from the centre of the earth. Another revolving satellite B of mass  $2m$  is at a distance of  $2r$  from the earth's centre. Their time periods are in the ratio of
- (A) 1 : 2 (B) 1 : 16  
(C) 1 : 32 (D)  $1 : 2\sqrt{2}$

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**Space for Rough Work**

## CHEMISTRY – (PART – B)

This part contains **12 Multiple Choice Questions** number **79 to 90**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

79. How much energy (approx) is required to melt 450g of ice at 0°C?  
(A) 1500 kJ (B) 1600 kJ  
(C) 150 kJ (D) None of these
80. The rate of diffusion of CH<sub>4</sub> at a given temperature is twice that of a gas (X). The molecular mass of X is :  
(A) 64 (B) 32  
(C) 4 (D) 8
81. The cause of Brownian movement is :  
(A) Convection current  
(B) Heat changes in liquid state  
(C) Impact of molecules of dispersion medium on colloidal particles  
(D) Attractive forces between particles of dispersed phase and dispersion medium
82. The purification of drinking water involves :  
(i) Chlorination (ii) Filtration  
(iii) Loading (iv) Sedimentation  
Choose the correct order of these processes  
(A) i, ii, iii, iv (B) ii, iv, iii, i  
(C) iv, ii, iii, i (D) iv, iii, ii, i
83. Which of the following statements is incorrect about amorphous solids?  
(A) They are anisotropic  
(B) They are comparatively soft  
(C) They have low m.p.  
(D) There is not orderly arrangement of particles

*Space for Rough Work*

84. Fractional distillation of two liquids gives better results if the difference is large in their :  
(A) Boiling points (B) Densities  
(C) Colours (D) Solubilities
85. Out of two liquids X and Y, X produces more cooling effect than that of Y on the skin. This observation infers that :  
(A) The boiling point of X is more than that of Y (B) The boiling point of X is less than that of Y  
(C) The latent heat of X is less than that of Y (D) The density of X is higher than that of Y
86. Efficiency of desert cooler is maximum :  
(A) In cold and dry days (B) In hot and dry days  
(C) In humid days (D) In hot and humid days
87. Which of the following is **NOT** a property of liquid state?  
(A) Intermolecular force of attraction in a liquid is quite larger than solid  
(B) All liquids are accompanied by cooling on evaporation  
(C) Lower the boiling point of a liquid, greater is its vapour pressure at room temperature  
(D) None of these
88. Which one is called pseudo solid?  
(A)  $\text{CaF}_2$  (B) Glass  
(C) NaCl (D) All of these
89. When excess of electrolyte is added to a colloid it  
(A) Coagulates (B) Stabilises  
(C) Gets diluted (D) Doesn't change
90. Boot polish contains:  
(A) Liquid dispersed phase in solid dispersion medium  
(B) Liquid dispersed phase in liquid dispersion medium  
(C) Solid dispersed phase in liquid dispersion medium  
(D) Gas dispersed phase in liquid dispersion medium

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*Space for Rough Work*



## MATHEMATICS – (PART – C)

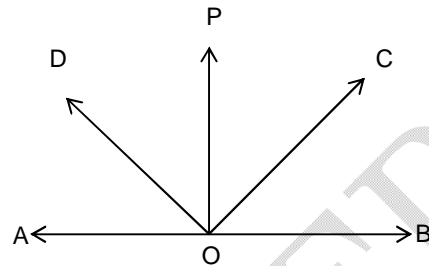
*This part contains 12 Multiple Choice Questions number 91 to 102. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.*

91. In triangles ABC and QPR, three equality relations between parts are as follows:  
 $AB = QP$ ,  $\angle B = \angle P$  and  $BC = PR$ . State which of the congruence condition appears?  
 (A) SAS (B) ASA  
 (C) SSS (D) RHS
92.  $\left(\frac{a^m}{a^n}\right)^{m+n} \left(\frac{a^n}{a^l}\right)^{n+l} \left(\frac{a^l}{a^m}\right)^{l+m} =$   
 (A) 0 (B) 1  
 (C)  $1/2$  (D)  $-1$
93. If a polynomial, given by  $p(x) = k(x-1)(x-2)$  &  $p(0) = 2$ , Then the value of k is  
 (A) 0 (B) 1  
 (C) 2 (D) None of these.
94. The sum of all exterior angles of a hexagon is:  
 (A)  $180^\circ$  (B)  $270^\circ$   
 (C)  $360^\circ$  (D)  $720^\circ$
95. Three or more lines passing through the same point are called  
 (A) collinear lines (B) parallel lines  
 (C) concurrent lines (D) coincident lines
96. The coordinates of one end point of a diameter of a circle are  $(4, -1)$  and the coordinates of the centre of the circle are  $(1, 3)$ . Find the co-ordinates of the other end of the diameter.  
 (A)  $(2, 5)$  (B)  $(-2, 7)$   
 (C)  $(-2, 5)$  (D)  $(2, -5)$

**Space for Rough Work**

97. In  $\triangle ABC$ , if AD divides BC in the ratio  $m : n$ , then find the ratio of the areas of  $\triangle ABD$  &  $\triangle ADC$ .  
 (A)  $m + n : n$  (B)  $m : m + n$   
 (C)  $m : n$  (D)  $m^2 : n^2$

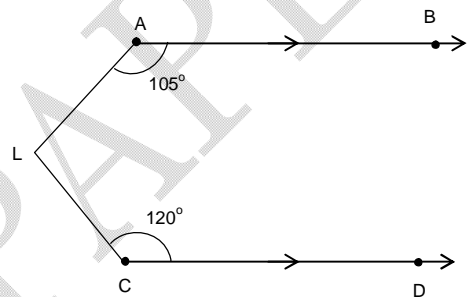
98. In the following figure,  $\angle BOP = 2x^\circ$ ,  $\angle AOP = 2y^\circ$ , OC and OD are angle bisectors of  $\angle BOP$  and  $\angle AOP$  respectively. Find the value of  $\angle COD$ :



- (A)  $75^\circ$   
 (B)  $90^\circ$   
 (C)  $100^\circ$   
 (D)  $120^\circ$

99. If AB is parallel to CD, then angle ALC is equal to

- (A)  $75^\circ$   
 (B)  $135^\circ$   
 (C)  $110^\circ$   
 (D)  $145^\circ$

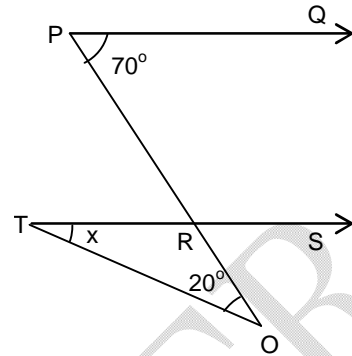


100. The value of  $\left(\frac{x^b}{x^c}\right)^{\frac{1}{bc}} \cdot \left(\frac{x^c}{x^a}\right)^{\frac{1}{ca}} \cdot \left(\frac{x^a}{x^b}\right)^{\frac{1}{ab}}$  is equal to

- (A)  $x$  (B)  $\frac{1}{x}$   
 (C)  $1$  (D)  $-1$

Space for Rough Work

101. In figure,  $PQ \parallel RS$ ,  $\angle QPR = 70^\circ$ ,  $\angle ROT = 20^\circ$ , find the value of  $x$
- (A)  $20^\circ$  (B)  $70^\circ$   
(C)  $110^\circ$  (D)  $50^\circ$



102. ABC is an equilateral triangle of side  $4\sqrt{3}$  cm. P, Q and R are midpoints of AB, CA and BC respectively. Find the area of  $\Delta PQR$
- (A)  $\frac{\sqrt{3}}{4}$  cm<sup>2</sup> (B)  $3\sqrt{3}$  cm<sup>2</sup>  
(C)  $2\sqrt{3}$  cm<sup>2</sup> (D)  $\frac{\sqrt{3}}{2}$  cm<sup>2</sup>

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*Space for Rough Work*

## BIOLOGY – (PART – D)

*This part contains 12 Multiple Choice Questions number 103 to 114. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.*

103. Which of the following is not a characteristic of prokaryotes?  
(A) DNA (B) Cell membrane  
(C) Cell wall (D) Endoplasmic reticulum
104. Within chloroplasts, light is captured by:  
(A) thylakoids within grana (B) grana within cisternae  
(C) cisternae within grana (D) grana within thylakoids
105. The rough ER is so named because it has an abundance of:  
(A) Mitochondria (B) Lysosomes  
(C) Golgi bodies (D) Ribosomes
106. Elongation of inter-node of the stem of grasses is facilitated by:  
(A) apical meristem (B) lateral meristem  
(C) intercalary meristem (D) secondary meristem
107. The tissue composed of living, thin walled cells made of cellulose is:  
(A) parenchyma (B) collenchyma  
(C) sclerenchyma (D) vessels
108. Which of the following is a connective tissue?  
(A) Bone (B) Cartilage  
(C) Blood (D) All of the above
109. Which of the following pollutants is not present in the vehicular exhaust emissions?  
(A) Lead (B) Ammonia  
(C) Carbon monoxide (D) Particulate matter

*Space for Rough Work*

110. What minerals are found in the run-off from agricultural land and untreated sewage effluents that are responsible for eutrophication of water bodies?  
(A) Phosphorus and carbon (B) Nitrogen and phosphorus  
(C) Potassium and arsenic (D) Iron and manganese
111. Materials of biological origin which are commonly used to maintain and improve soil fertility are:  
(A) Green manure (B) Biofertilizers  
(C) Bio-insecticides (D) Both (A) and (B)
112. What does G. M. O stand for?  
(A) Genetically modified organism (B) Growth Maturity organism  
(C) Good Maturity Offspring (D) Gold Medal Order
113. The elements that are taken by the plants from the soil are called:  
(A) nutrients (B) minerals  
(C) chlorophyll (D) pigments
114. The fish that feeds on weeds is:  
(A) Catla (B) Rohu  
(C) Mrigal (D) Grass carp

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*Space for Rough Work*

# FIITJEE SAMPLE PAPER – 2018

## (Big Bang Edge Test / Talent Recognition Exam)

for students presently in

### Class 9 (Paper 1)

### ANSWERS

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