

FIITJEE Talent Reward Exam-2014

for student presently in
Class 9

PAPER-1

Time: 3 Hours

Maximum Marks: 198

Instructions:

Caution: Question Paper CODE as given above MUST be correctly marked in the answer OMR sheet before attempting the paper. Wrong CODE or no CODE will give wrong results.

1. You are advised to devote 1 Hour on Section-I and 2 Hours on Section-II.
2. This Question paper consists of 2 sections. All questions will be multiple choice single correct out of four choices with marking scheme in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			correct answer	wrong answer
SECTION – I	IQ	Q. 1 to 24	+3	-1
SECTION – II	Physics	Q. 25 to 36	+3	-1
	Chemistry	Q. 37 to 48	+3	-1
	Mathematics	Q. 49 to 60	+3	-1
	Biology	Q. 61 to 66	+3	-1

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

Note: Please check this Question Paper contains all **66** questions in serial order. If not so, exchange with the correct Question Paper.

Registration Number : _____
Name of the Candidate : _____
Answer Sheet No. : _____
Test Centre : _____

Section-I**IQ****Straight Objective Type**

This section contains 24 multiple choice questions numbered 1 to 24. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Find the odd one out:
(A) Apple (B) Mango
(C) Orange (D) Papaya
2. PALE : LEAP :: POSH : ?
(A) HOSP (B) POHS
(C) SHOP (D) POSH
3. BUCKET : ACTVBDJLDFUV :: BONUS : ?
(A) ACMNMOTVRT (B) SUNOB
(C) ACNPMOTVRT (D) ACMNMOTURT
4. Which year after 2002 will have the same calendar as of 2002?
(A) 2009 (B) 2008
(C) 2013 (D) None of these
5. In a row of boys, Mukesh is 13th from the left and Suresh is 17th from the right. If in this row, Mukesh is 11th from the right then what is the position of Suresh from the left?
(A) 6th (B) 7th
(C) 10th (D) 12th
6. Pankaj is fifth from the left and Sandeep is twelfth from the right end in a row of children. If Sandeep shifts three places towards Pankaj, he becomes tenth from the left end. How many children are there in the row?
(A) 21 (B) 22
(C) 23 (D) 24

Directions (Q. 7 to 9): These questions are based on 26 English alphabet, where 1st Letter on Left end is A and 26th on Right end is Z.

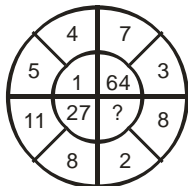
7. If every alternate letter of the given alphabet series (English alphabets A – Z) starting from A indicates the every next 3rd month of the year. A indicates the march 2001, then which letter indicates the last month of the year 2001?
(A) G (B) K
(C) H (D) F

Space for rough work

8. If the alphabets are written in the reverse order and every alternate letter starting with Y is dropped, which letter will be exactly in the middle of the remaining letter of the alphabets?
 (A) M (B) N
 (C) O (D) L
9. If the first half of English Alphabets are reversed then, which letter will be 11th to the left of 26th letter from the left?
 (A) M (B) N
 (C) O (D) C

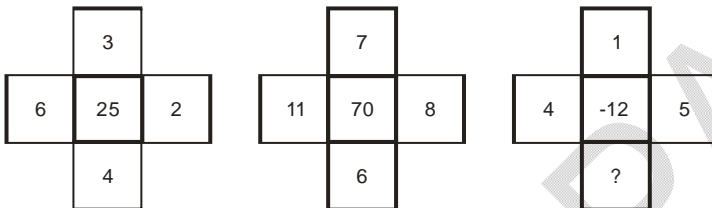
Directions (Q. 10 to 12): In each of these questions, find the missing character.

10.



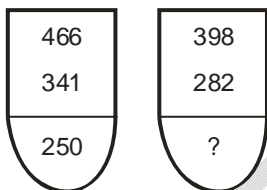
- (A) 0 (B) 8
 (C) 125 (D) 216

11.



- (A) 1 (B) 2
 (C) 6 (D) 10

12.



- (A) 232 (B) 268
 (C) 298 (D) 350

Space for rough work

Direction (13 - 18) Study the following information and answer the questions given below it. A blacksmith has five iron articles A, B, C, D and E, each having a different weight.

- (i). A weighs twice as much as B.
- (ii). B weighs four and a half times as much as C.
- (iii). C weighs half as much as D.
- (iv). D weighs half as much as E.
- (v) E weighs less than A but more than C.

13. Which of the following is the lightest in weight?
(A) A (B) B
(C) C (D) D
14. E is lighter in weight than which of the other two articles?
(A) A, B (B) D, C
(C) A, C (D) A, B
15. E is heavier than which of the following two articles?
(A) D, B (B) D, C
(C) A, C (D) A, B
16. Which of the following represents the descending order of weight?
(A) A, B, E, D, C (B) B, D, E, A, C
(C) E, C, D, A, B (D) C, A, D, B, E
17. Which of the following articles is the heaviest in weight?
(A) A (B) B
(C) C (D) D
18. Which of the above given statements is not necessary to determine the correct order of articles according to their weights?
(A) (i) (B) (ii)
(C) (iii) (D) (v)

Space for rough work

Direction (Q. 19 - 24): Read the following information carefully and answer the given questions

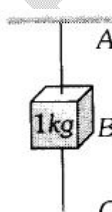
P,Q,R,S,T,V and W are seven members of a family. There are three female members. Each of them has a different profession lawyer, Chartered Accountant, Engineer, Teacher, Doctor, Architect and Pharmacist, No lady is either Pharmacist or Chartered Accountant. Each of them has a different monthly income. The Chartered Accountant earns the most. S, the engineer, earns less than V, the doctor. R, the teacher, earns more than P and less than S. W's wife earns the least. T, is an unmarried lady lawyer and she earns less than P and more than only Q. The Pharmacist's income is not the lowest.

19. Who earns the least?
(A) P (B) Q
(C) P or Q (D) R
20. Which of the following pairs of professions represents the profession of husband and wife?
(A) Pharmacist, Architect (B) Chartered Accountant, Architect
(C) Engineer, Pharmacist (D) None of these
21. Which of the following statements is false?
(A) The Architect earns more than the lawyer
(B) The Teacher earns less than the Engineer
(C) The Doctor earns more than the Engineer
(D) None of these
22. What is P's profession ?
(A) Pharmacist (B) Lawyer
(C) Teacher (D) Data inadequate
23. How many members earn less than the Doctor?
(A) Two (B) Five
(C) Four (D) One.
24. Which of the following represents the three female members of the family?
(A) PTQ (B) TRQ
(C) VTQ (D) Data inadequate

Space for rough work

Section-II**Science and Mathematics****Physics****Straight Objective Type**

Physics contains 12 multiple choice questions numbered 25 to 36. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

25. A particle moves along a semicircle of radius 10m in 5 seconds. The average velocity of the particle is
(A) $2\pi \text{ ms}^{-1}$ (B) $4\pi \text{ ms}^{-1}$
(C) 2 ms^{-1} (D) 4 ms^{-1}
26. A mass of 1kg is suspended by a string A. Another string C is connected to its lower end (see figure). If a sudden jerk is given to C, then
(A) The portion AB of the string will break
(B) The portion BC of the string will break
(C) None of the strings will break
(D) The mass will start rotating
- 
27. The mass of a lift is 2000 kg. When the tension in the supporting cable is 28000N, then its acceleration is
(A) 30 ms^{-2} downwards (B) 4 ms^{-2} upwards
(C) 4 ms^{-2} downwards (D) 14 ms^{-2} upwards
28. A particle of mass 100g is thrown vertically upwards with a speed of 5m/s. The work done by the force of gravity during the time the particle goes up is
(A) -1.25J (B) 1.25J
(C) 0.5J (D) -0.5J
29. A force of 5N, making an angle θ with the horizontal, acting on an object displaces it by 0.4m along the horizontal direction. If the object gains kinetic energy of 1J, the horizontal component of the force is
(A) 1.5N (B) 2.5N
(C) 3.5N (D) 4.5N

Space for rough work

30. Two identical solid copper spheres of radius R are placed in contact with each other. The gravitational attraction between them is proportional to
(A) R^2 (B) R^{-2}
(C) R^4 (D) R^{-4}
31. If R is the radius of the earth and g the acceleration due to gravity on the earth's surface, the mean density of the earth is
(A) $4\pi G / 3gR$ (B) $3\pi R / 4gG$
(C) $3g / 4\pi RG$ (D) $\pi RG / 12G$
32. Unit of acceleration is
(A) N-Kg (B) N/m
(C) N/Kg (D) Kg/N
33. The correct statement from the following is
(A) A body having zero velocity will not necessarily have zero acceleration
(B) A body having zero velocity will necessarily have zero acceleration
(C) A body having uniform speed can have only uniform acceleration
(D) A body having non-uniform velocity will have zero acceleration
34. A bullet fired into a fixed target loses half of its velocity after penetrating 3cm. How much further it will penetrate before coming to rest assuming that it faces resistance to motion
(A) 1.5cm (B) 1.0cm
(C) 3.0cm (D) 2.0cm
35. A police jeep is chasing with velocity of 45 km/h a thief in another jeep moving with velocity 153 km/h. Police fires a bullet with muzzle velocity of 180 m/s. The velocity with which it will strike the car of the thief is
(A) 150 m/s (B) 27 m/s
(C) 450 m/s (D) 250 m/s
36. Same force acts on two bodies of different masses 3 kg and 5 kg initially at rest. The ratio of times required to acquire same final velocity is
(A) 5:3 (B) 25:9
(C) 9:25 (D) 3:5

Space for rough work

Chemistry

Straight Objective Type

Chemistry contains 12 multiple choice questions numbered 37 to 48. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

37. Which of the following represent the suitable conditions for the liquefaction of gases?
(A) low temperature, low pressure (B) high temperature, low pressure
(C) high temperature, high pressure (D) low temperature, high pressure
38. Dispersed particles are visible by the naked eyes, in a :
(A) suspension (B) true solution
(C) colloidal solution (D) all the above
39. To separate two miscible liquids having a difference of lesser than 25K, we use :
(A) fractional distillation (B) simple distillation
(C) separating funnel (D) chromatography
40. The size of colloidal particles is :
(A) smaller than 10^{-8} cm (B) bigger than 10^{-6} cm
(C) between 10^{-6} and 10^{-8} cm (D) none of the above
41. If 0.5 mol of BaCl_2 is mixed with 0.2 mol of Na_3PO_4 , the maximum amount of $\text{Ba}_3(\text{PO}_4)_2$ that can be formed is :
(A) 0.70 mol (B) 0.5 mol
(C) 0.20 mol (D) 0.10 mol
42. Evaporation is the process of a liquid changing into vapour :
(A) at its boiling point (B) below boiling point
(C) at 273 K (D) at 373 K
43. The correct order of steps to separate different components of a mixture containing iron filings, sand and ammonium chloride is :
(A) solution, filtration and magnetic separation
(B) magnetic separation, solution and sublimation
(C) magnetic separation and sublimation
(D) solution, distillation and magnetic separation

Space for rough work

44. To separate acetone and water (which have a difference of more than 25K in their boiling points) we use the process of :
(A) fractional distillation (B) simple distillation
(C) chromatography (D) separating funnel
45. What mass of $\text{NH}_3(\text{g})$ will be formed when 50 kg of $\text{N}_2(\text{g})$ and 10.0 kg of $\text{H}_2(\text{g})$ are mixed?
(A) 50.23 kg (B) 56.66 kg
(C) 60.7 kg (D) 85.0 kg
46. Which one of the following has least density?
(A) water (B) water vapour
(C) ice (D) common salt
47. How many moles of atom present in 1 mole of glucose molecule?
(A) 24 mole (B) 12 mole
(C) 6 mole (D) 18 mole
48. Calculate the mass of KClO_3 that will liberate 11.2 litre at NTP.
(A) 50.83 g (B) 40.83 g
(C) 45.83 g (D) 36.83 g

Space for rough work

Mathematics

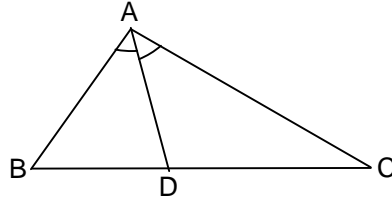
Straight Objective Type

Mathematics contains 12 multiple choice questions numbered 49 to 60. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

49. The value of $0.\overline{23} + 0.\overline{22}$ is
 (A) 0.45 (B) $0.4\overline{3}$
 (C) $0.44\overline{5}$ (D) 0.45
50. The positive square root of $7 + \sqrt{48}$ is
 (A) $7 + 2\sqrt{3}$ (B) $7 + \sqrt{3}$
 (C) $2 + \sqrt{3}$ (D) $3 + \sqrt{2}$
51. If $\frac{5 - \sqrt{3}}{2 + \sqrt{3}} = x + y\sqrt{3}$, then
 (A) $x = 13, y = -7$ (B) $x = -13, y = 7$
 (C) $x = -13, y = -7$ (D) $x = 13, y = 7$
52. The area of the triangle formed by the points A (2, 0), B (6, 0) and C (4, 6) is
 (A) 24 sq. units (B) 12 sq. units
 (C) 4 sq. units (D) 6 sq. units
53. In a right angled triangle, two sides other than the hypotenuse are 8 cm and 15 cm. Then, the length of its circumradius is
 (A) $\frac{17}{2}$ cm (B) $\frac{15}{2}$ cm
 (C) $\frac{13}{2}$ cm (D) $\frac{11}{2}$ cm
54. If $\sqrt{2} = 1.4142$, then $\sqrt{\frac{\sqrt{2}-1}{\sqrt{2}+1}}$ is equal to
 (A) 0.1718 (B) 5.8282
 (C) 0.4142 (D) 2.4142
55. If $a^2 + b^2 + c^2 - ab - bc - ca = 0$, then
 (A) $a + b = c$ (B) $b + c = a$
 (C) $c + a = b$ (D) $a = b = c$
56. The factors of $x^3 - 1 + y^3 + 3xy$ are
 (A) $(x - 1 + y)(x^2 + 1 + y^2 + x + y - xy)$ (B) $(x + y + 1)(x^2 + y^2 + 1 - xy - x - y)$
 (C) $(x - 1 + y)(x^2 - 1 - y^2 + x + y + xy)$ (D) $3(x + y - 1)(x^2 + y^2 - 1)$

Space for rough work

57. If $(3x - 1)^7 = a_7x^7 + a_6x^6 + a_5x^5 + \dots + a_1x + a_0$, then $a_7 + a_6 + a_5 + \dots + a_1 + a_0 =$
(A) 0 (B) 1
(C) 128 (D) 64
58. In Fig., ABC is a triangle in which $\angle B = 2\angle C$. D is a point on side BC such that AD bisects $\angle BAC$ and $AB = CD$. The measure of $\angle BAC$ is



- (A) 72° (B) 90°
(C) 120° (D) 60°
59. If $p = 3 + \frac{1}{p}$, then value of $\frac{p}{p^2 + p - 1}$ is
(A) $\frac{7}{4}$ (B) $\frac{5}{4}$
(C) $\frac{3}{4}$ (D) $\frac{1}{4}$
60. If $y = -1$, then value of $1 + \frac{1}{y} + \frac{1}{y^2} + \frac{1}{y^3} + \frac{1}{y^4} + \frac{1}{y^5}$ is
(A) -1 (B) 0
(C) 1 (D) 2

Space for rough work

Biology

Straight Objective Type

Biology contains 6 multiple choice questions numbered 61 to 66. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

61. Muscular tissue is differentiated into:
(A) Unstriated, Striped (B) Striped, Cardiac
(C) Unstriated, Striped and Cardiac (D) Cardiac, Unstriated
62. Which of the following comprises only simple tissues?
(A) Parenchyma, Collenchyma and Sclerenchyma
(B) Parenchyma, Xylem and Collenchyma
(C) Parenchyma, Xylem and Sclerenchyma
(D) Parenchyma, Xylem and Phloem
63. Polio immunizing vaccine was developed by
(A) E. Jenner (B) Dr. Salk
(C) St. Hale (D) Landsteiner
64. Match the following:
(a) Nucleus (i) Porter
(b) Golgi complex (ii) de Duve
(c) Mitochondria (iii) Kolliker
(d) Lysosomes (iv) Camillo Golgi
(e) Endoplasmic reticulum (v) Robert Brown.
(A) a-v, b-iv, c-iii, d-ii, e-i (B) a-ii, b-iv, c-v, d- i, e-iii
(C) a-iv, b-iii, c-ii, d-i, e-v (D) a-i, b-ii, c-v, d-iii, e-iv
65. Exotic breeds are those breeds which are imported and reared in India. Holstein-Friesian is an exotic breed. Can you name the original country from where it has been imported.
(A) Russia (B) Holland
(C) U.S.A. (D) Germany
66. Cell theory is not applicable for
(A) Bacteria (B) Fungus
(C) Algae (D) Virus

Space for rough work

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Class 9

PAPER-1

ANSWER KEYS

SECTION – I (IQ)		SECTION – II (SCIENCE & MATHEMATICS)			
Q. No	Answer	Q. No	Answer	Q. No	Answer
1.	A	25.	D	49.	A
2.	C	26.	B	50.	C
3.	C	27.	B	51.	A
4.	C	28.	A	52.	B
5.	B	29.	B	53.	A
6.	D	30.	C	54.	C
7.	A	31.	C	55.	D
8.	B	32.	C	56.	A
9.	C	33.	A	57.	C
10.	D	34.	B	58.	A
11.	B	35.	A	59.	D
12.	A	36.	D	60.	B
13.	C	37.	D	61.	C
14.	A	38.	A	62.	A
15.	B	39.	A	63.	B
16.	A	40.	C	64.	A
17.	A	41.	D	65.	B
18.	A	42.	B	66.	D
19.	B	43.	C		
20.	B	44.	B		
21.	A	45.	B		
22.	A	46.	B		
23.	B	47.	A		
24.	D	48.	B		