FIITJEE **SAMPLE PAPER – 2018**
(Big Bang Edge Test / Talent Recognition Exam)
for **students presently in**
Class 7 (**Paper 2**)

Time: 3 Hours (1:45 pm – 4:45 pm) **Code | 7007** *Maximum Marks: 314*

Instructions:

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

1. 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 – I & II (PCMB)	Question no.	Marking Scheme for each question	
		correct answer	**wrong answer**
PHYSICS	1 to 2, 9 to 10, 66	**+3**	**–1**
	3 to 7, 11 to 14, 67 to 68	**+4**	**–1**
	8, 15, 69 to 70	**+5**	**–2**
CHEMISTRY	16 to 17, 24 to 25, 71	**+3**	**–1**
	18 to 22, 26 to 29, 72 to 73	**+4**	**–1**
	23, 30, 74 to 75	**+5**	**–2**
MATHEMATICS	31 to 32, 39 to 40, 76	**+3**	**–1**
	33 to 37, 41 to 44, 77 to 78	**+4**	**–1**
	38, 45, 79 to 80	**+5**	**–2**
BIOLOGY	46 to 47, 54 to 55, 60 to 61	**+3**	**–1**
	48 to 52, 56 to 58, 62 to 64	**+4**	**–1**
	53, 59, 65	**+5**	**–2**

2. 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.

3. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.

4. **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.

5. **See method of marking of bobbles of the back of cover page for question no. 66 to 80.**

Note: *Please check this Question Paper contains all **80** 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 **66 to 80**

Numerical based questions single digit answer 0 to 9

Example 1:

If answer is 6.

Correct method:

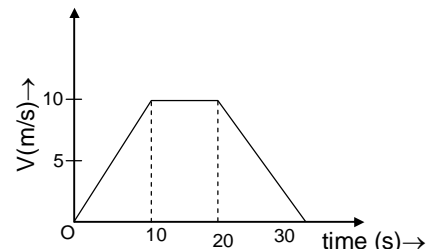ⓞ ① ② ③ ④ ⑤ ❻ ⑦ ⑧ ⑨

Example 2:

If answer is 2.

Correct method:

ⓞ ① ❷ ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Section-I   **Science & Mathematics**

Physics   *(Part – A)*

Straight Objective Type

*Question numbers 1 to 15 are 15 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*
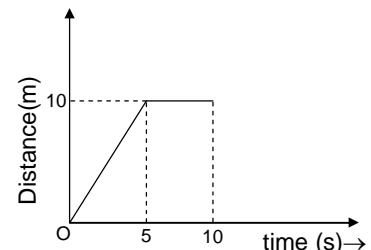
1. Instrument used to measure wind speed is
   (A) Speedometer   (B) Barometer
   (C) Anemometer   (D) Velocimeter

2. Motion along a straight line is called
   (A) Vibration   (B) Rectilinear motion
   (C) Oscillatory motion   (D) Circular motion

3. One calorie is approximately equal to
   (A) 0.24 Joule   (B) 4.2 Joules
   (C) 42 Joules   (D) 4200 Joules

4. The distance travelled by the body as per the given graph is
   (A) 200 m
   (B) 250 m
   (C) 300 m
   (D) 400 m

5. The speed of a body describing its motion is
   (A) direction   (B) state
   (C) type   (D) rapidity

6. SI unit of speed is
   (A) m   (B) ms^{-1}
   (C) ms^{-2} (D) ms

7. Which of these is not a unit of time?
   (A) Second   (B) Hour
   (C) Light year   (D) Year

Space for Rough Work

8. An object is moving on a circular path of radius 35 m. What will be its displacement when it completes half a revolution?
    (A) 110 m   (B) 70 m
    (C) 35 m   (D) 17.5

9. The low pressure centre of the cyclone is called
    (A) Focus   (B) Eye
    (C) Epi-centre   (D) Hurricane

10. 1 litre of water at 40°C is mixed with 1 litre of water at 80°C. Temperature of resulting mixture will be
    (A) Less than 40°C   (B) Greater than 80°C
    (C) 100°C   (D) Greater than 40°C but less than 80°C

11. A train passes over a bridge. If the speed of the train is 30 m/s and the train takes 20 seconds to cross the bridge, find the length of the bridge when length of the train is 120 m.
    (A) 400 m   (B) 600 m
    (C) 480 m   (D) 100 m

12. The ratio of CGS unit to SI unit of acceleration is:
    (A) 10^2 (B) 10
    (C) 10^{-2} (D) 1

13. 54 km/hr = _____ m/sec
    (A) 54 m/sec   (B) 27 m/sec
    (C) 15 m/s   (D) 10 m/s

14. Calculate the distance travelled by the body A in 10 minutes from the graph given below:
    (A) 10 m
    (B) 25 m
    (C) 100 m
    (D) 125 m

15. The reading of a particular temperature on Fahrenheit scale is 122°F. Reading of Celsius scale for the same temperature will be
    (A) 122°C   (B) 100°C
    (C) 90°C   (D) 50°C

Space for Rough Work

Chemistry *(Part – B)*

Straight Objective Type

*Question numbers 16 to 30 are 15 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

16. Which acid is found in Tea?
    (A) Acetic acid   (B) Tannic acid
    (C) Formic acid   (D) Citric acid

17. What is the taste of acid?
    (A) sweet   (B) bitter
    (C) salty   (D) sour

18. Which one of the following contains acetic acid?
    (A) vinegar   (B) milk
    (C) lemon   (D) grape

19. The word acid is derived from the Latin word?
    (A) acidus   (B) citrus
    (C) acere   (D) acidure

20. Which of the following acid is a weak acid?
    (A) Sulphuric acid   (B) Carbonic acid
    (C) Nitric acid   (D) Hydrochloric acid

21. Which one is odd among the following?
    (A) Cotton   (B) Silk
    (C) Nylon   (D) Wool

22. What type of fibre is cotton?
    (A) Acid   (B) Base
    (C) Cellulose   (D) Bast

23. Which product of caterpillar forms silk?
    (A) Skin   (B) Secretion
    (C) excretion   (D) hair

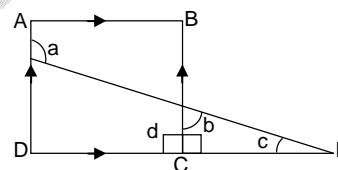
Space for Rough Work

---

24. The process of obtaining silk from silk moths is
    (A) apiculture
    (B) sericulture
    (C) pisciculture
    (D) floriculture

25. Which type of leaves are used to fed silk worms?
    (A) Mulberry leaves
    (B) Tulsi leaves
    (C) Neem leaves
    (D) Curry leaves

26. In which one of the following preparations, physical change is observed.
    (A) Tea
    (B) Lemonade
    (C) Pizza
    (D) Cake

27. Which process is involved in change of state from gas to liquid?
    (A) Sublimation
    (B) Condensation
    (C) Boiling
    (D) Evaporation

28. Which process do water to ice undergo when kept in freezer?
    (A) Sublimation
    (B) Melting
    (C) Freezing
    (D) Vaporization

29. Melting point indicates a particular
    (A) state
    (B) phenomenon
    (C) change
    (D) temperature

30. Which one of the following forms homogeneous mixture?
    (A) salt and sand
    (B) sand and water
    (C) salt and water
    (D) sulphur and water

Space for Rough Work

Mathematics (Part – C)

Straight Objective Type

*Question numbers 31 to 45 are 15 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*
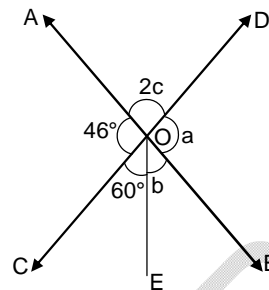
31. A farmer has 192 animals out of which $\dfrac{7}{16}$ are cattle. $\dfrac{2}{3}$ of cattle are dairy cows. How many dairy cows he has?
    (A) 128   (B) 84
    (C) 56   (D) 112

32. The perimeter of a rectangle is 52 cm. If its width 2 cm more than one third of its length. Find the area of rectangle.
    (A) 124 cm^2 (B) 144 cm^2
    (C) 134 cm^2 (D) 154 cm^2

33. Meena's mother is four times as old as Meena. After five years, her mother will be three times as old as she will be then what are their present ages?
    (A) 10, 40   (B) 20, 30
    (C) 15, 35   (D) 12, 38

34. In the figure, if $\angle d$ is a right angle, then $\angle a + \angle b =$
    (A) 180°
    (B) 90°
    (C) 75°
    (D) 60°

35. Simplify $\left[29 - (-2)\{6 - (7-3)\} \right] \div \left[3 \times \{5 + (-3) \times (-2)\} \right]$
    (A) 1   (B) −1
    (C) −2   (D) −3

Space for Rough Work

36. In the figure two straight lines AB and CD intersect at O. If $\angle COT = 60°$. Find the value of $\dfrac{a+b+c}{2}$.
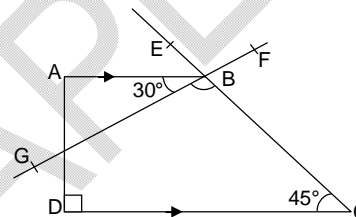   (A) 81°
    (B) 90°
    (C) 162°
    (D) 45°

37. Find the mean of the given data
    8, 2, 3, 4, 1, 3, 2, 4, 5, 4, 2, 3, 4, 6, 9
    (A) 1   (B) 3
    (C) 4   (D) 8

38. In the figure, ABCD is a trapezium. FG is a straight line.
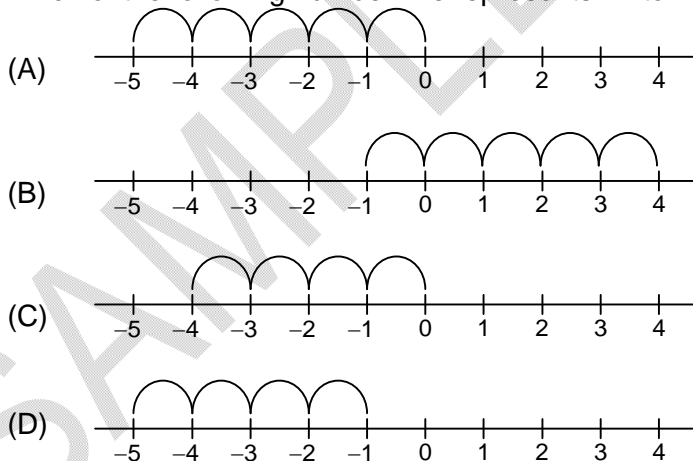   Find $\angle EBF$.
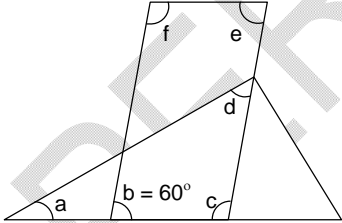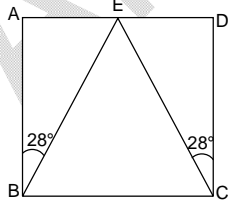   (A) 70°
    (B) 105°
    (C) 150°
    (D) 60°

39. The sum of the digits of a two digit number is 10. If the number formed by reversing the digits is less than the original number by 36, find the number.
    (A) 73   (B) 37
    (C) 63   (D) 36

40. Which of the following number line represents -1 to $+4$?

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

Space for Rough Work

41. The value of x so that $\frac{3}{4}(7x - 1) - 2x - \frac{1}{2} = \frac{x+3}{2}$ is

(A) 2   (B) 3
(C) 1   (D) 0

42. The mean of three numbers is 40. All the three numbers are different natural numbers. If lowest is 19, what could be highest possible number of remaining two numbers?
(A) 81   (B) 40
(C) 100   (D) 71

43. The figure (a parallelogram and a triangle) below is not drawn to scale. Which one of the following option is NOT true?
(A) ∠a + ∠d = 60°
(B) ∠c + ∠e = 160°
(C) ∠c + ∠f = 240°
(D) ∠e + ∠f = 180°

44. The figure (not drawn to scale), ABCD is a square such that AE = ED. Find ∠BEC.
(A) 28°
(B) 56°
(C) 62°
(D) 24°

45. If the L.C.M. of 12 and 42 is (10 m + 4), then the value of 'm' is
(A) 50   (B) 8
(C) $\frac{1}{5}$ (D) 1

Space for Rough Work

Biology   *(Part – D)*

Straight Objective Type

*Question numbers 46 to 65 are 20 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

46.   Which of these is specifically an adaptation for Xeric (dry) conditions?
       (A) Extensive root system   (B) Leaf surface greatly reduced
       (C) Stem performs photosynthesis   (D) All of these

47.   The *Rhizobium* bacteria lines inside the root nodules of
       (A) peas   (B) beans
       (C) peanuts   (D) all of the above

48.   In Western Ghats of India, the long tailed macaque is
       (i) Good climber   (ii) Beard Ape
       (iii) Feeds on fruits, seeds and plants   (iv) Lives on ground
       (A) (i) & (ii)   (B) (i), (ii) & (iii)
       (C) (ii) & (iv)   (D) (i) & (iii)

49.   Which of the following is an element of weather?
       (A) Humidity   (B) Water
       (C) Soil   (D) Wild life

50.   The special feature and habit that helps an animal to survive in its environment is known as_____
       (A) Evolution   (B) Adaptation
       (C) Polymorphisms   (D) Hibernation

51.   The respiration that takes place in absence of oxygen is
       (A) Aerobic   (B) Anaerobic
       (C) Fermentation   (D) None of these

52.   The plant that traps & feeds on insects is
       (A) Cuscuta   (B) China rose
       (C) Rose   (D) Venus fly trap

Space for Rough Work

53. State whether the statements are true or false:
    (i) During heavy exercise, the breathing rate of a person slows down.
    (ii) Fishes have lungs for respiration.
    (iii) The size of chest cavity increases during inhalation.

	(i)	(ii)	(iii)
(A)	F	F	T
(B)	F	T	F
(C)	F	T	T
(D)	T	F	T

54. During prolonged fasting, in what sequence are the following organic compounds used by the body?
    (A) Carbohydrates → Proteins →Lipids
    (B) Carbohydrates → Fats → Proteins
    (C) Fats → Carbohydrates → Proteins
    (D) Proteins → Lipids → Carbohydrates

55. Which of the following is not a part of large intestine?
    (A) Rectum
    (B) Colon
    (C) Caecum
    (D) Duodenum

56. Plants take carbon dioxide from air during photosynthesis from
    (A) Root hair
    (B) Leaves
    (C) Water
    (D) Flowers

57. The leather objects that are kept in hot humid weather for a long time are spoiled due to the growth of
    (A) Algae
    (B) Yeast
    (C) Fungi
    (D) Moss

58. Which of the following pairs of food components in human reaches the stomach totally undigested?
    (A) Starch & cellulose
    (B) Proteins & fat
    (C) Starch & fat
    (D) None of these

Space for Rough Work

59.   Fill in the blanks with appropriate options:
       (i) Produces alcohol anaerobically _____I_____
       (ii) During exhalation, the ribs moves _____II_____
       (iii) In lungs, bronchioles end up in _____III_____
       (iv) Unicellular organisms exchange gas by _____IV_____

	(I)	(II)	(III)	(IV)
(A)	Diffusion	Yeast	Downward	Alveoli
(B)	Downward	Alveoli	Diffusion	Yeast
(C)	Alveoli	Yeast	Downward	Diffusion
(D)	Yeast	Downward	Alveoli	Diffusion

60.   The green pigment in leaves helps to
       (A) Take in CO_2 (B) Absorb water
       (C) Absorb sunlight   (D) None of these

61.   Digestion of starch takes place in
       (A) Buccal cavity & esophagus   (B) Buccal cavity & duodenum
       (C) Stomach & duodenum   (D) Duodenum only

62.   Emulsification of fat occurs by
       (A) Bile juice   (B) Pancreatic juice
       (C) Gastric juice   (D) Intestinal juice (succus entericus)

63.   In India, tropical rainforests are found in which of the following state?
       (A) Andhra Pradesh   (B) Western Ghats
       (C) Assam   (D) (B) & (C)

64.   Giving out of air rich in carbon dioxide is called _____.
       (A) Respiration   (B) Inhalation
       (C) Exhalation   (D) Breathing

65.   Match the following:
       (i) Lenticel   (p) Dome-shaped muscle
       (ii) Earthworm   (q) Bark of stem
       (iii) Diaphragm   (r) in presence of oxygen
       (iv) Aerobic respiration   (s) skin
       (A) (i)→(q), (ii)→(s), (iii)→(p), (iv)→(r)   (B) (i)→(s), (ii)→(r), (iii)→(q), (iv)→(p)
       (C) (i)→(r), (ii)→(s), (iii)→(q), (iv)→(p)   (D) (i)→(p), (ii)→(q), (iii)→(r), (iv)→(s)

Space for Rough Work

Section-II   **Physics, Chemistry & Mathematics**

Physics   *(Part – A)*

Numerical Based Questions

Question numbers 66 to 70 are 5 numerical based questions single digit answer 0 to 9.

66.   A car increases its speed from 50 m/s to 100 m/s in 10 seconds. Calculate its acceleration (in m/s^2)

67.   A car starting from rest undergoes an acceleration of 1.5 m/s^2. After four seconds, its speed will be _____ m/s.

68.   A car starting from rest travels 3 m towards south and 4 m towards west. The total displacement of the car is _____ m.

69.   A body travelling with a velocity of 10 m/s starts accelerating with a rate of 2 m/s^2. Find the time taken (in seconds) by it to attain a velocity of 26 m/s.

70.   An object acquires a velocity of 72 km/h in 20 seconds starting from rest. The acceleration of the object is _____ m/s^2.

Space for Rough Work

Chemistry *(Part – B)*

Numerical Based Questions

Question numbers 71 to 75 are 5 numerical based questions single digit answer 0 to 9.

71.   How many atoms of oxygen are present in one molecule of sulphuric acid?

72.   How many of the following are exotic breeds of sheep?
        Dorset, Soviet, Muga, Somalia, Eri, Merino

73.   What is the pH of distilled water?

74.   The number of hydra acids among the following
        HCl, HNO_3, H_2CO_3, H_2SO_3, HBr, H_2SO_4

75.   How many of the following compounds are salts?
        Sodium hydroxide, sodium chloride, sodium oxide, sodium carbonate, sodium nitrate, sodium sulphate

Space for Rough Work

Mathematics   *(Part – C)*

Numerical Based Questions

Question numbers 76 to 80 are 5 numerical based questions single digit answer 0 to 9.

76. In a $\triangle ABC$ $\angle B = 45°$, $\angle C = 55°$ and bisector of $\angle A$ meets B at a point D. Find $\dfrac{\angle ADB}{19} = ?$

77. In the frequency distribution of discrete data given below, the frequency p against value 3 is missing.
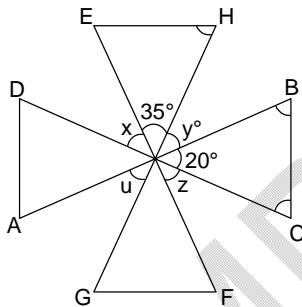
Variable x	0	1	2	3	4	5
Frequency f	4	20	40	p	20	4

If the mean is 2.5, then find the value of $\dfrac{p}{5}$.

78. $\dfrac{x+9}{28} + \dfrac{x-4}{3} = \dfrac{5x-32}{9} - \dfrac{2x-3}{35}$. Find the value of $\dfrac{x+2}{3}$.

79. The denominator of a fraction is 2 less than twice the numerator. If the numerator and denominator are both increased by 1 the fraction becomes $\dfrac{3}{5}$. Find the fraction.

80.

Find $\dfrac{x+u+y+z}{50}$

Space for Rough Work

FIITJEE **SAMPLE PAPER – 2018**
(Big Bang Edge Test / Talent Recognition Exam)
for **students presently in**
Class 7

ANSWERS
Paper 2

1.	**C**	2.	**B**	3.	**B**	4.	**A**
5.	**D**	6.	**B**	7.	**C**	8.	**B**
9.	**B**	10.	**D**	11.	**C**	12.	**C**
13.	**C**	14.	**A**	15.	**D**	16.	**B**
17.	**D**	18.	**A**	19.	**C**	20.	**B**
21.	**C**	22.	**C**	23.	**B**	24.	**B**
25.	**A**	26.	**B**	27.	**B**	28.	**C**
29.	**D**	30.	**C**	31.	**C**	32.	**B**
33.	**A**	34.	**A**	35.	**A**	36.	**A**
37.	**C**	38.	**B**	39.	**A**	40.	**B**
41.	**C**	42.	**A**	43.	**B**	44.	**B**
45.	**B**	46.	**D**	47.	**D**	48.	**B**
49.	**A**	50.	**B**	51.	**B**	52.	**D**
53.	**A**	54.	**B**	55.	**D**	56.	**B**
57.	**C**	58.	**B**	59.	**D**	60.	**C**
61.	**B**	62.	**A**	63.	**D**	64.	**C**
65.	**A**	66.	**5**	67.	**6**	68.	**5**
69.	**8**	70.	**1**	71.	**4**	72.	**4**
73.	**7**	74.	**2**	75.	**4**	76.	**5**
77.	**8**	78.	**7**	79.	**5**	80.	**5**