

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
ocotion	000,000		Quootion no.	correct answer	wrong answer
	PHYSICS	(PART-A)	1 to 15	+1.5	0
SECTION	CHEMISTRY	(PART-B)	16 to 30	+1.5	0
SECTION - I	MATHEMATICS	(PART-C)	31 to 45	+1.5	0
	BIOLOGY	(PART-D)	46 to 60	+1.5	0
SECTION - II	PHYSICS	(PART-A)	61 to 66	+3	–1
	CHEMISTRY	(PART-B)	67 to 72	+3	–1
	MATHEMATICS	(PART-C)	73 to 78	+3	–1
	BIOLOGY	(PART-D)	79 to 84	+3	–1
SECTION - III	MATHEMATICS	(PART-A)	85 to 96	+3	0
SECTION - III	MATHEMATICS	(PART-B)	97 to 108	+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 at the bottom of this sheet.
- 6. See method of marking of bubbles at the back of cover page for question no. 97 to 108.

Note: Please check this Question Paper contains all 108 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	:

Numerical b Example 1: If answer is Correct met	6.
Example 2:	
If answer is	2.
Correct met	
	0 1 2 3 4 5 6 7 8 9
~	

#### **Recommended Time: 60 Minutes for Section – I**

#### Section – I

#### PHYSICS - (PART - A)

This part contains **15 Multiple Choice Questions** number **1 to 15.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1.	Absolute zero corresponds to	
	(A) 273 K	(B) –273 K
	(C) 273°C	(D) –273°C

- A car travels with a speed 60 km/h in the initial one hour and with a speed of 40 km/h in the next half hour. Its average speed is
  (A) 50 km/h
  (B) 53.33 km/h
  (C) 48 km/h
  (D) 70 km/h
- A body from ground level is thrown vertically upwards and reaches a maximum height of 4m. It then returns to the ground. The total distance travelled by the body is \_\_\_\_\_.
   (A) Zero
   (B) 8 m
   (C) 4 m
   (D) None of these
- 4. One joule is approximately equal to (A) 0.28 cal (C) 0.24 cal (D) 4.2 cal
- 5. What will be the distance (in km) covered by a motorist in 30 minutes travelling with a speed of 45 km/h?
   (A) 22.5 km
   (B) 45 km

(A) 22.5 KM	(B) 45 Km
(C) 1350 km	(D) 11.25 km

- 6. Flow of heat takes place
  - (A) from a body at higher temperature to a body at lower temperature
  - (B) from a body at lower temperature to a body at higher temperature
  - (C) when both the bodies are at same temperature
  - (D) None of these

#### SAMPLE PAPER-BBE/TRE-2020-C-VII (Paper-2)-S&M-4

- 7. At which temperature water has maximum density? (A) 0°C (B) -273°C  $(C) 4^{\circ}C$ (D) 100°C 8. A ball is thrown upwards. Its velocity at the highest point is (A) maximum (B) same as initial velocity (C) zero (D) cannot be predicted 9. Which of the following will cause more severe burn (A) steam at 100°C (B) boiling water (C) water at 95°C (D) none of these A 100 g iron ball is cooled down from 100°C to 30°C. Calculate the loss of heat if specific heat of 10. iron is  $4.8 \times 10^2$  J kg<sup>-1</sup> °C<sup>-1</sup>. (A) 3360000 J (B) 3360 J (C) 336 J (D) 33.6 J On a 120 km track, a train travels the first 30 km at a uniform speed of 30 km/h. How fast must 11. the train travel the next 90 km so as to average speed for entire trip is 60 km/h? (A) 60 km/h (B) 40 km/h (C) 90 km/h (D) 120 km/h 12. The distance travelled by the body as per given velocitytime graph is (A) 200 m (m/s)⊖ 10 (B) 250 m (C) 300 m 5 (D) 400 m O 20 10 <sup>30</sup> time (s) $\rightarrow$ 100 g of hot water at 90°C is mixed to 400 g of cold water at 10°C, the equilibrium temperature of 13. the mixture is: (A) 26°C (B) 45°C (C) 60°C (D) 50°C 14. Change 5 m/s to km/h (A) 15 km/h (B) 18 km/h (C) 30 km/h (D) None of these
- 15. An object covers half distance with speed  $V_1$  and rest half distance with speed  $V_2$ . Find the average speed of object for whole journey.

(A) $\frac{V_1 + V_2}{2}$	(B) $\frac{2V_1 + V_2}{V_1 + 2V_2}$
(C) $\frac{2V_1V_2}{V_1 + V_2}$	(D) $\frac{V_1 + 2V_2}{2V_1 + V_2}$

### CHEMISTRY - (PART - B)

This part contains **15 Multiple Choice Questions** number **16 to 30.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

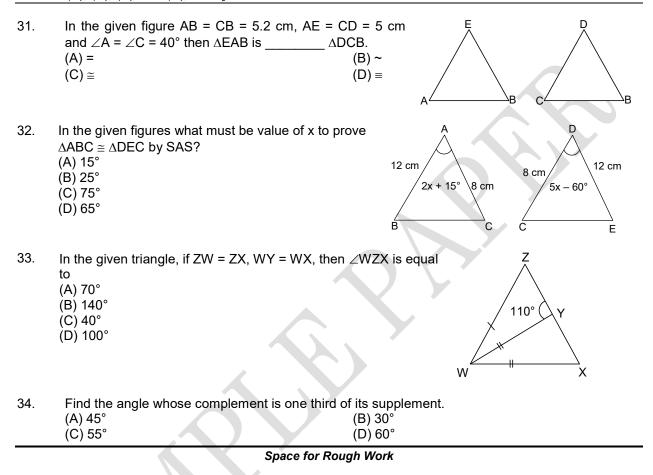
23.	Which one of the following acid is inorganic? (A) acetic acid (C) lactic acid	(B) carbonic acid (D) citric acid
22. 23.	The salt produced by neutralization of an acid ar (A) acidic (C) neutral	nd a base may be (B) basic (D) all the three
21.	Burning of candle involves the following change/ (A) physical (C) both (A) and (B)	(B) chemical (D) none of these
20.	The fleece of sheep are generally sheared durin (A) winter (C) spring	g (B) summer (D) autumn
19.	Find the odd one among the following fibres. (A) cotton (C) nylon	(B) silk (D) wool
18.	The colour of methyl orange in an alkaline soluti (A) orange (C) red	on is (B) pink (D) yellow
17.	Scouring is done to remove (A) grease (C) dirt	(B) dust (D) all the three
16.	Curd consists of the following acid. (A) ascorbic (C) lactic	(B) butyric (D) oxalic

#### SAMPLE PAPER-BBE/TRE-2020-C-VII (Paper-2)-S&M-6

24.	Vinegar is a dilute solution of (A) acetic acid (C) tartaric acid	(B) citric acid (D) none of these
25.	The fine gummy filaments from silkworms get ha (A) water (C) air	ardened on exposure to (B) sunlight (D) none of these
26.	Silk fibres are made up of (A) carbohydrates (C) fats	(B) proteins (D) wax
27.	Which one of the following is a physical change' (A) combustion (C) evaporation	? (B) respiration (D) corrosion
28.	Sugar is an example of (A) element (C) mixture	(B) compound (D) salt
29.	In which one of the following preparations, physic (A) Tea (C) Pizza	ical change is observed. (B) Lemonade (D) Cake
30.	Which one does <b>NOT</b> alter during physical and a (A) colour (C) mass	chemical changes? (B) energy (D) none of these

#### **MATHEMATICS – (PART – C)**

This part contains **15** *Multiple Choice Questions* number **31 to 45.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.



#### SAMPLE PAPER-BBE/TRE-2020-C-VII (Paper-2)-S&M-8

35.	Solve for t: t - (2t + 5) - 5(1 - 2t) = 2(3 + 4t) - 3(t - 4) (A) 5 (C) 7	(B) 2 (D) 3
36.	$\Delta ABC$ is an equilateral triangle in which AD $\perp$ B (A) $\Delta ADC$ (C) $\Delta ABC$	C ∆ABD is congruent to: (B) ∆ACD (D) ∆CDA
37.	If a bicycle wheel has 36 spokes then the angle (A)10° (C)20°	between pair of adjacent spokes is (B)15° (D)12°
38.	The side included between $\angle A$ and $\angle B$ of $\triangle ABC$ (A) AC (C) AB	C is (B) CB (D) None of these
39.	In the given figure AB = AC, then which of the for relation between x and y? (A) x > y (B) x < y (C) x = y (D) $\frac{x}{y} = \frac{1}{2}$	billowing is correct
40.	The mean of 10 numbers is 7. If each number numbers is (A) 82	is multiplied by 12, then the mean of new set of (B) 48

(A) 82	(B) 48
(C) 78	(D) 84

- 41. The ages of A and B are in the ratio 5 : 3. After 6 years, their ages will be in the ratio 7 : 5. Find the sum of their present ages is:
  - (A) 9 years (C) 15 years

- (B) 10 years
- (D) 24 years
- 42. A reflex angle measure: (A) more than  $90^{\circ}$  but less than  $180^{\circ}$ (C) more than  $180^{\circ}$  but less than  $360^{\circ}$
- (B) more than  $180^\circ$  but less than  $270^\circ$
- (D) none of these
- 43. In the given triangle ABC, find the value of x.
  (A) 55°
  (B) 110°
  (C) 70°
  (D) 27.5°

C 2x B A

grade8

60

grade6

120°

- 44. If in any triangle ABC, the base BC is produced in both ways the sum of the exterior angles at B and C is
  (A) 180° A
  (B) 180° + A
  - (A)  $180^{\circ} A$  (B)  $180^{\circ} + A$ (C)  $90^{\circ} + A$  (D)  $180^{\circ} - A/2$
- 45. From the pie graph shown, find the percent of student that are in grade 7.
  (A) 35%
  (B) 50%
  (C) 40%
  (D) 28%

#### **BIOLOGY – (PART – D)**

This part contains **15 Multiple Choice Questions** number **46 to 60.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

46. Parallel venation is found in: (A) Dentaria (B) Hollyhock (C) Banyan (D) Grass 47. In plants, xylem and phloem comprises of (A) Protective tissue (B) Food storing tissue (C) Vascular tissue (D) Reproductive tissue 48. Rakesh went for mountain climbing. As he climbed higher, he began to feel difficulty in breathing following dizziness and lack of muscular co-ordination. Later, he had to be carried down. What caused this? (A) Absence of oxygen (B) Decrease in oxygen content (C) Decrease in nitrogen content (D) None of these 49. Omnivores are those which eat: (A) Only plants (B) Only animals (C) Both A & B (D) None of these 50. A balanced diet contains: (A) Carbohydrate (B) Protein (C) Fat, minerals, vitamins (D) All of these 51. Dietary fibres are known as: (A) Roughage (B) Protein (C) Carbohydrate (D) None of these 52. Which vitamin can be prepared by our body in presence of sunlight? (A) Vitamin A (B) Vitamin B (D) Vitamin D (C) Vitamin C Space for Rough Work

	Space for Roug	gh Work
60.	Breathing is a part of: (A) Reproduction (C) Both (A) & (B)	(B) Respiration (D) None of these
59.	The process by which an organism procures foo (A) Respiration (C) Transportation	d is called: (B) Nutrition (D) All of these
58.	Plants cannot manufacture food without: (A) Oxygen (C) Both (A) & (B)	(B) Chlorophyll (D) None of these
57.	The process of breathing includes: (A) Taking in O <sub>2</sub> (C) Both (A) & (B)	(B) Giving out $CO_2$ (D) None of these
56.	When water vapour condenses near the ground (A) Rainfall (C) Fog	there is: (B) Snowfall (D) a hailstorm
55.	Relative humidity is measured with the help of a (A) Thermometer (C) Hygrometer	(B) Hydrometer (D) Rain gauge
54.	helps in sound production in birds. (A) Trachea (C) Pharynx	(B) Syrinx (D) Oesophagus
53.	Roots are of mainly: (A) Tap root (C) Both A & B types	(B) Fibrous root (D) None of these

#### **Recommended Time: 60 Minutes for Section – II**

#### Section – II

#### PHYSICS - (PART - A)

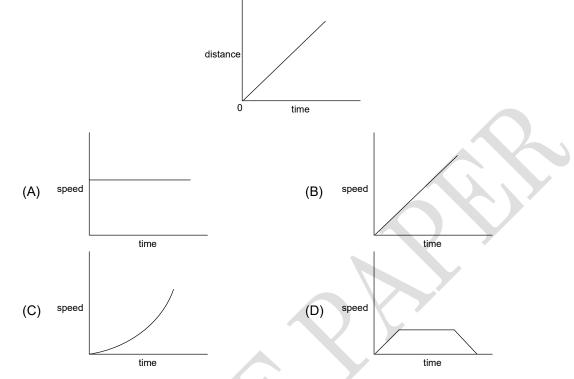
This part contains **6** *Multiple Choice Questions* number **61** to **66**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

- 61. 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
- 62. How much heat energy is required to completely melt 20 g of ice at 0°C to water? (Latent heat of fusion of ice = 80 cal/g)
  (A) 1600 cal
  (B) 1.6 cal
  (C) 80 cal
  (D) None of these
- 63. Calculate the quantity of heat required to convert 1.5 kg of ice at 0°C to water at 15°C. Latent heat of fusion of ice =  $3.35 \times 10^5$  J kg<sup>-1</sup>, specific heat of water = 4186 J kg<sup>-1</sup> °C<sup>-1</sup> (A) 597000 J (B) 596685 J (C) 595000 J (D) none of these
- 64. A car covers distance  $S_1$  with velocity  $V_1$  and distance  $S_2$  with velocity  $V_2$  between two cities P and Q on a straight line path. Its average velocity will be

(A)  $\frac{V_1 + V_2}{2}$ 

(C)  $\frac{(S_1 + S_2)V_1V_2}{S_1V_2 + S_2V_1}$ 

(B)  $\frac{V_1 - V_2}{2}$ (D)  $\frac{S_1V_2 + S_2V_1}{(S_1 + S_2) \times V_1V_2}$ 



For the given distance-time graph, select the correct speed-time graph:

66. 10 kg of water at 90°C is cooled to 60°C. Calculate the heat lost by the water. Specific heat of water is 4200 J kg<sup>-1</sup> °C<sup>-1</sup>.
(A) 1260 kJ
(B) 42000 J

(A) 1260 kJ	(B) 42000 J
(C) 1260 J	(D) 420 kJ

65.

#### CHEMISTRY - (PART - B)

This part contains **6** *Multiple Choice Questions* number **67 to 72.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

67.	Slaked lime is chemically (A) CaO (C) CaCO <sub>3</sub>	(B) Ca(OH) <sub>2</sub> (D) Ca(HCO <sub>3</sub> ) <sub>2</sub>
68.	Arrange the following terms in order for woo 1. Sorting 2. Scouring 3. Spinning 4. Shearing	ol processing
	(A) 4, 3, 2, 1 (C) 4, 2, 1, 3	(B) 4, 1, 2, 3 (D) 4, 3, 1, 2
69.	Acid rain may contain (A) carbonic acid (C) nitric acid	(B) sulphurous acid (D) all the three
70.	Evaporation takes place (A) at boiling point (C) above boiling point	(B) at melting point (D) below boiling point
71.	Which one is <b>NOT</b> a property of silk? (A) cool in summer (C) warm in winter	(B) difficult to dye (D) absorbs moisture
72.	Vinegar is added to baking soda and a example for	chemical change takes place. This can be the best

(A) production of heat (C) production of sound

(B) change of colour (D) evolution of gas

### MATHEMATICS - (PART - C)

*This part contains* **6** *Multiple Choice Questions number* **73 to 78.** *Each question has 4 choices (A), (B), (C) and (D), out of which* **ONLY ONE** *is correct.* 

73.	The condition that makes the following pair of congruent is (A) SSS (B) ASA (C) SAS (D) RHS	triangles			
74.	18 c 1 d 11 ?	'd' means '+' then, what is the value of 45 a 15 b			
	(A) 67 (C) 59	(B) 80 (D) 64			
75.	In the given figure, if I    m, then what type of a tr (A) Equilateral (B) Isosceles (C) Scalene (D) Right angled	Fiangle ABC is? A B C D B C B C B C D D D D D D D D			
76.	Sum of the digits of a two digit number is 9. The more than twice the original number. The origina (A) 72 (C) 36	number obtained by interchanging the digits is 18 al number is (B) 27 (D) 63			
77.	An integer is 10 more than its one third part. The (A) 15 (C) 18	e integer is (B) 12 (D) 25			
78.	What is increasing order of the fractions $\frac{6}{7}, \frac{8}{9}, \frac{7}{8}$	9 10 ?			
	(A) $\frac{6}{7}, \frac{8}{9}, \frac{7}{8}, \frac{9}{10}$	(B) $\frac{9}{10}, \frac{7}{8}, \frac{8}{9}, \frac{6}{7}$			
	(C) $\frac{6}{7}, \frac{7}{8}, \frac{8}{9}, \frac{9}{10}$	(D) $\frac{9}{10}, \frac{8}{9}, \frac{7}{8}, \frac{6}{7}$			
Space for Rough Work					

### BIOLOGY - (PART - D)

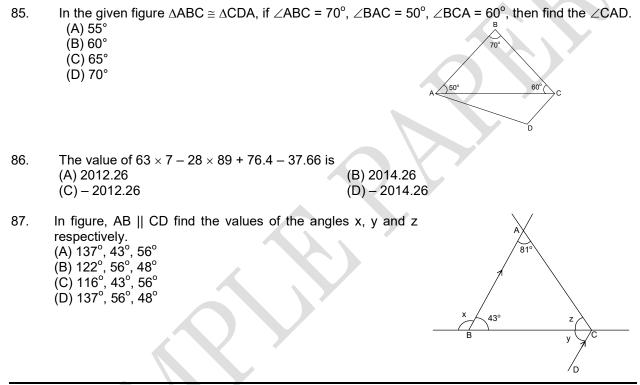
This part contains **6 Multiple Choice Questions** number **79 to 84.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

79.	Deficiency of iron mineral in our diet causes: (A) Anaemia (C) Rickets	<ul><li>(B) Goitre</li><li>(D) Bone and tooth decay</li></ul>				
80.	Holozoic nutrition includes taking in the substances: (A) complex, more complex (C) complex, simpler	_ substances and converting them into (B) simpler, complex (D) None of these				
81.	If a photosynthesizing plant releases oxygen concouded that the plant has been supplied with (A) $C_6H_{12}O_6$ containing <sup>18</sup> O (C) $CO_2$ containing <sup>18</sup> O	ntaining more than the normal amount of <sup>18</sup> O, it is (B) H <sub>2</sub> O containing <sup>18</sup> O (D) Oxygen in the form of ozone				
82.	When diaphragm of man is completely dome shaped it shows (A) End of expiration and beginning of inspiration (B) Beginning of expiration and end of inspiration (C) Increased rate of breathing (D) Decreased rate of breathing					
83.	Root develops from which part of the germinating seed?(A) Cotyledons(B) Radicle(C) Pericarp(D) Plumule					
84.	Mark the incorrect statement: (A) The lion-tailed macaque (also called beard ape) lives in the rainforests of Western Ghats. (B) Tusks of elephants are modified teeth (C) Both (A) and (B) (D) Red eyed frog possesses a long, large beak					
Space for Rough Work						

## Recommended Time: 60 Minutes for Section – III Section – III

### **MATHEMATICS – (PART – A)**

This part contains **12 Multiple Choice Questions** number **85 to 96.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.



D 88. C In the given figure  $\triangle ADB \cong \triangle BCA$ , which of the following statement is true? (A) SSS (B) ASA (C) SAS (D) RHS 30° 30° в If '+' means 'x', '-' means 'x', 'x' means '-' and 'x' means '+'. Find the value of the expression: 6 + 89.  $8 - 2 + 5 \times 20 =$ (A) 8 (B) 4 (C) 6 (D) 9 90. The side of an equilateral triangle measures 72 cm. The perimeter of this triangle is equal to the perimeter of a square shape. What is the length of the side of the square? (A) 18 cm (B) 36 cm (C) 54 cm (D) 108 cm 91. What should be subtracted from 0.10 to get 0.03? (A) 0.7 (B) 0.07 (C) 0.007 (D) None of these In the given figure, If  $\angle BAC = \angle DAC$  and 92. В  $\angle$ BCA =  $\angle$ DCA, then  $\triangle$ ABC  $\cong$  ..... (A)  $\triangle$ CDA (B) ∆DAC (C)  $\triangle ADC$ Ď (D) AACD

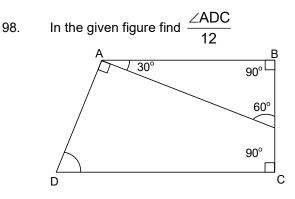
In a triangle ABC  $\angle$ B = 90°. AB : BD : DC = 3:1:3. If AC = 20 cm then what is the length of AD. 93. А (A)  $4\sqrt{10}$  cm (B)  $2\sqrt{10}$  cm (C)  $3\sqrt{10}$  cm (D) none of these В D 94. In the given figure find the value of x + y + z. (A) 180° (B) 225° (C) 195° (D) 210° 90° D 40 95. Simplifying 272 × 42 + 272 × 50 + 272 × 82 (B) 45328 (A) 47328 (C) 46528 (D) 48526 The hypotenuse of a right angled triangle is 15 cm. If one of the remaining two sides is 9 cm, find 96. the length of the other side. (A) 10 cm (B) 12 cm (C) 15 cm

(D) 17 cm

#### **MATHEMATICS – (PART – B)**

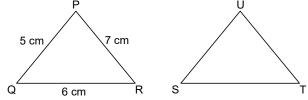
This part contains **12 Numerical Based Questions** number **97 to 108.** Each question has **Single Digit Answer 0 to 9.** 

97. In a  $\triangle ABC \angle B = 90^{\circ}$  and  $AC = 8\sqrt{2}$ . If AB = BC, then find AB.

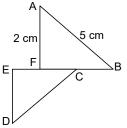


- 99. Area of rectangle is 216 m<sup>2</sup>. If length of rectangle is 36 m. Find the value of  $\frac{\text{perimeter of rectangle}}{12}$ .
- 100. If the sum of four consecutive odd number is 40, then find the smallest number.
- 101. If the angles of a triangle ABC are in the ratio 11 : 13 : 12, then the unit digit of smallest angle is.
- 102. If the complement of an angle is 89°, then the angle will be
- 103. In a right angle triangle OAB,  $\angle A = 90^{\circ}$ , OA = 24 m and AB = 10 m, find the sum of the digits of length OB.

104. If  $\triangle$ PQR is congruent to  $\triangle$ STU, then what is the length of TU?



105. In the given figure,  $\triangle ABF \cong \triangle DCE$ , then find the value of CD.



- 106. After 15 years, Salma will be four times as she is now. Determine her present age (in years).
- 107. Michael purchased a notebook for Rs.23.75 a pencil for Rs.3.35 and a pen for Rs.15.90. He has a 50 rupee note to the shopkeeper. The amount he got back is Rs.\_\_\_\_\_.
- 108. The sum of three numbers is 25. The second number is twice the first and the third exceeds the second by 5. Find the second number.

# **FIITJEE** SAMPLE PAPER – 2020

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

for students presently in

# Class 7 (Paper 2) ANSWERS

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