FIITJEE SAMPLE PAPER (FIITJEE Talent Reward Exam-2020)



for students presently in Class 8 (Paper 2)

Time: 3 Hours (1:45 pm – 4:45 pm)

Code 8008

Maximum Marks: 240

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 30 Minutes on Section-I, 50 Minutes on Section-II, 50 Minutes on Section-III and 50 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		
Section	Subject		Question no.	correct answer	wrong answer
	PHYSICS	(PART-A)	1 to 6	+1	0
	CHEMISTRY	(PART-B)	7 to 12	+1	0
SECTION – I	MATHEMATICS	(PART-C)	13 to 18	+1	0
	BIOLOGY	(PART-D)	19 to 24	+1	0
	PHYSICS	(PART-A)	25 to 32	+3	-1
SECTION – II	CHEMISTRY	(PART-B)	33 to 40	+3	-1
	MATHEMATICS	(PART-C)	41 to 48	+3	-1
	PHYSICS	(PART-A)	49 to 54	+3	-1
SECTION - III	CHEMISTRY	(PART-B)	55 to 60	+3	-1
	MATHEMATICS	(PART-C)	61 to 66	+3	-1
	BIOLOGY	(PART-D)	67 to 72	+3	–1
	PHYSICS	(PART-A)	73 to 77	+3	0
SECTION - IV	CHEMISTRY	(PART-B)	78 to 82	+3	0
	MATHEMATICS	(PART-C)	83 to 87	+3	0
	PHYSICS	(PART-D)	88 to 90	+3	0
	CHEMISTRY	(PART-E)	91 to 93	+3	0
	MATHEMATICS	(PART-F)	94 to 96	+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. 88 to 96.

Note: Please check this Question Paper contains all 96 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 Numerical bas	88 to 96 red questions single digit answer 0 to 9
If answer is 6.	
Correct metho	d:
	0 1 2 3 4 5 6 7 8 9
Example 2:	
If answer is 2.	
Correct metho	d:
	0 1 2 3 4 5 6 7 8 9
5	

Recommended Time: 30 Minutes for Section – I

Section – I

PHYSICS - (PART - A)

This part contains **6 Multiple Choice Questions** number **1 to 6**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1.	The maximum force of friction when the block is (A) sliding friction (C) rolling friction	s just starting to move is called the (B) limiting friction (D) none of these	
2.	An object weighting 10 N in air, weighs 9.3 N object is (A) $\frac{10}{9.3}$ N (C) 0.7 N	in a liquid. The buoyant force experienced by the (B) $\frac{9.3}{10}$ N (D) $(10 + 9.3)$ N	
3.	(A) kg m ^{-3} (C) g cm ^{3}	ject. (B) g cm ⁻³ (D) kg cm ³	
4.	Mass per unit volume of water is (A) 1 kg/m ³ (C) 1 g/cm ³	(B) 1000 kg/m ³ (D) Both (B) and (C)	
5.	The mass of an astronaut on the surface of astronaut on the surface of earth and on the su (A) 1 : 6 (C) 2 : 1	the earth is 60 kg. The ratio of the mass of the rface of moon will be (B) 6 : 1 (D) 1 : 1	
6.	By Ohm's law (A) $V = \frac{I}{R}$ (C) R = VI	(B) $I = \frac{V}{R}$ (D) $V = \frac{R}{I}$	
Space for Rough Work			

CHEMISTRY - (PART - B)

This part contains **6** Multiple Choice Questions number **7** to **12**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

7.	An element X forms an oxide XO which turns re (A) A metal (C) A metalloid	ed litmus blue. Identify X. (B) A non-metal (D) A noble gas
8.	Coal gas is a mixture of (A) $CH_4 + H_2 + CO$	(B) $C_4 H_{10} + H_2$
	(C) $C_4H_{10} + H_2O$	(D) $C_2H_6 + H_2 + O_2$
9.	Which polymer is known as synthetic wool? (A) nylon (C) polyester	(B) acrylic (D) bakelite
10.	$\begin{array}{c} C_{12}H_{22}O_{11} & \xrightarrow{Conc.}{H_2SO_4} \rightarrow 12C + 11H_2O \\ \\ \text{Which of the following is obtained in the above} \\ \text{(A) Animal charcoal} \\ \text{(C) Coke} \end{array}$	reaction? (B) Sugar charcoal (D) Wood charcoal
11.	Gasoline is obtained from crude petroleum oil b (A) fractional distillation (C) steam distillation	y its (B) vacuum distillation (D) pyrolysis
12.	When a metal X is added to dilute HCl solution, (A) K (C) Ag	there is no evolution of gas. The metal X is (B) Na (D) Zn

MATHEMATICS – (PART – C)

This part contains **6 Multiple Choice Questions** number **13 to 18**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

13.	Sara's income is 25% more than that of Anil. By what percent Anil's income is less than that of Sara?		
	(A) 25	(B) 24	
	(C) $22\frac{1}{2}$	(D) 20	
14.	$5x^2 - 19x + 12 =$		
	(A) $(5x-4)(x-3)$	(B) $(5x-4)(x+3)$	
	(C) $(x+2)(5x-1)$	(D) $(5x-6)(x-1)$	
15.	The rational number $-\frac{18}{5}$ lies between the cons	secutive integers	
	(A) −2 and −3 (C) −4 and −5	(B) –3 and –4 (D) –5 and –6	
16.	A sum of money amounts to Rs. 5200 in 5 years The rate of interest per annum is :	s and to Rs. 5680 in 7 years at simple interest.	
	(A) 3% (C) 5%	(B) 4% (D) 6%	
17.	If $25^{n-1} + 100 = 5^{2n-1}$, then the value of 'n' is:		
17.	(A) 5 $+100 = 5$, then the value of 11 is.	(B) 2	
	(C) -2	(D) –3	
18.	If $x - \frac{1}{x} = 4$, then $\left(x + \frac{1}{x}\right)$ is equal to:		
	(A) 5√2	(B) 2√5	
	(C) $4\sqrt{2}$	(D) $4\sqrt{5}$	
Space for Rough Work			

317

BIOLOGY - (PART - D)

This part contains **6** Multiple Choice Questions number **19 to 24**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

- Manual removal of weeds can be done with the help of _____.
 (A) Plough
 (B) Khurpi
 (C) Seed drill
 (D) Pump
- 20. Before sowing the seeds, it is necessary to break soil to the size of grains to get better yield. The main tool used for such are:
 (A) Tractor, Hoe, Seed drill
 (B) Bullock, Tractor, Sprinkler
 (C) Plough, Hoe, Cultivator
 (D) Seed drill, Plough, Dripper
- 21. Cilia are found in: (A) Paramecium (C) Amoeba
- 22. Which organ does hepatitis affect?(A) Heart(C) Liver
- 23. Animal cell do not have:(A) Nucleus(C) Plastid

(B) Plasma membrane (D) Mitochondria

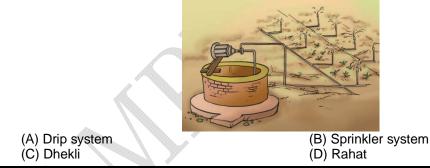
(B) Euglena

(B) Brain

(D) Kidneys

(D) Chlamydomonas

24. The below mentioned figure represent which method of irrigation?



Recommended Time: 50 Minutes for Section – II

Section – II

PHYSICS - (PART - A)

This part contains **8 Multiple Choice Questions** number **25 to 32**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

Space for Rough Work				
	(C) w ₁ + w ₂	(D) $\frac{W_1 + W_2}{2}$		
32.	A body of weight w_1 is suspended from the The ceiling pulls the chain by a force (A) w_1	ceiling of a room through a chain of weight w ₂ . (B) w ₂		
31.	Aluminium has a density of 2.7 g/cc. The mass (A) 45 g (C) 80 g	of 15 cc of aluminium is (B) 40.5 g (D) 100 g		
30.	Frictional force can't be measured in (A) kg wt (C) dyne	(B) newton (D) kg m/s		
29.	A kilowatt hour is a unit of (A) energy (C) electric charge	(B) power (D) electric current		
28.	A force of 15 N acts separately on two bod accelerations produces in the two cases will be (A) 5 : 3 (C) 8 : 15	ies of masses 3 kg and 5 kg. The ratio of the (B) 3 : 5 (D) 15 : 8.		
27.	Current flows when (A) the potential of a body is very high (B) the potential of a body is very low (C) placed near a body of low potential (D) placed in contact with a body of different por	tential		
26.	In the given figure if coefficient of friction be surface is 0.1 then find acceleration produce force acting on the block (take $g = 10 \text{ m/s}^2$) (A) 3 m/s^2 (C) 5 m/s^2			
25.	A liquid has density 1.5 g/cc. 50 cc of it is mixe mixture solution? (A) 13.125 g/cc (C) 1.11 g/cc	ed with 30 cc of water. What will be the density of (B) 1.3125 g/cc (D) 2.12 g/cc		

517

CHEMISTRY - (PART - B)

This part contains **8 Multiple Choice Questions** number **33 to 40**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

	Range of carbon atoms in gasoline is: (A) $C_{15} - C_{20}$ (C) $C_5 - C_{12}$	(B) $C_2 - C_7$ (D) $C_{13} - C_{15}$	
	$(C) C_5 - C_{12}$	$(D) C_{13} - C_{15}$	
34.	An element X forms two oxides XO and XO ₂ , th the element X is most likely to be: (A) Sulphur (C) Calcium	e oxide XO is neutral but XO ₂ is acidic in nature, (B) Carbon (D) Hydrogen	
35.	Which of the following have branched structure? (A) Low density polythene (C) Poly Vinyl Chloride	(B) High density polythene (D) Cellulose	
36.	Which of the following is NOT correct regarding (A) Step-growth polymer (C) Condensation polymer	terylene? (B) Synthetic fibre (D) Thermosetting plastic	
37.	Boron is (A) metal (C) non-metal	(B) metalloid (D) alkali	
38.	Which will condense near the top out of petrol, c (A) Petrol (C) Fuel oil	liesel oil, fuel oil and kerosene? (B) Diesel oil (D) Kerosene	
39.	Which of the following is NOT an example of add (A) Teflon (C) Nylon	dition polymerization? (B) Polythene (D) PVC	
40.	An alloy is (A) a compound (C) a homogeneous mixture	(B) a heterogeneous mixture(D) an element	
Space for Rough Work			

MATHEMATICS - (PART - C)

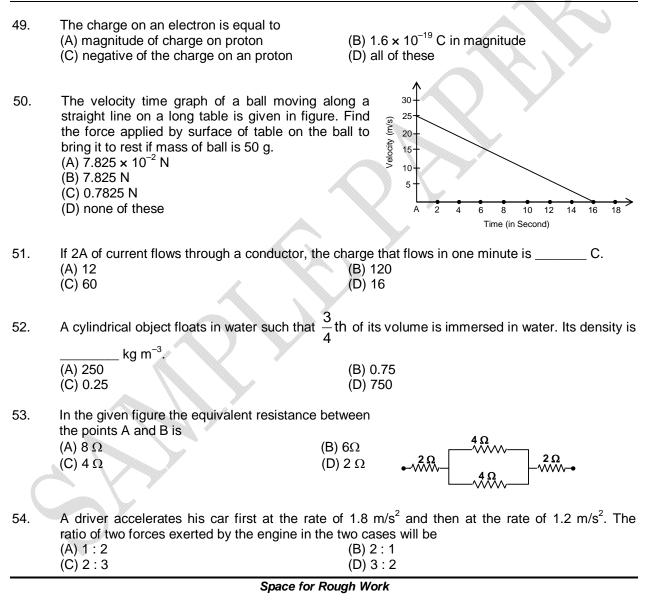
This part contains **8** Multiple Choice Questions number **41** to **48**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

41.	If $a^3 - b^3 = 56$ and $a - b = 2$, then value of (a (A) 48	(B) 20
	(C) 22	(D) 5
42.	If $27^{2x-1} = (243)^3$, then the value of 'x' is :	
	(A) 3	(B) 6
	(C) 7	(D) 9
43	The cost price of 36 books is equal to the sellin	
	(A) 20%	(B) $16\frac{4}{6}\%$ (D) $82\frac{2}{6}\%$
	(C) 18%	(D) $82\frac{2}{5}$ %
	· · /	6
44.	Diagonals of a rectangle ABCD meet at O. If A	
	(A) 6 cm (C) 8 cm	(B) 7 cm (D) 14 cm
45.	Diagonals of which of the following quadrilatera	Is do not bisect each other?
101	(A) Parallelogram	(B) Trapezium
	(C) Square	(D) Rectangle
46.	What is the multiplicative inverse of $a - \frac{1}{a}$?	
	(A) $a + \frac{1}{a}$	(B) $\frac{1}{a} - a$
	ä	
	(C) $\frac{a}{a-1}$	(D) $\frac{a}{a^2 - 1}$
47.	If $3x = 5y = 4z$ then $x : y : z$ is equals to:	
47.	(A) $9:12:16$	(B) 20 : 12 : 15
	(C) 15 : 10 : 9	(D) 8 : 5 : 3
48.	The rational form of $2.\overline{6}$ is	
	(A) $\frac{1}{3}$	(B) $\frac{7}{3}$
	W-	(D) $\frac{5}{3}$
	(C) $\frac{8}{3}$	(U) <u>-</u> 3
	Space for Roi	iah Work

Recommended Time: 50 Minutes for Section – III Section – III

PHYSICS – (PART – A)

This part contains **6** Multiple Choice Questions number **49** to **54**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.



CHEMISTRY - (PART - B)

This part contains **6 Multiple Choice Questions** number **55 to 60**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

55.	Which of the following is thermosetting plastics?		
	(A) Poly Vinyl Chloride	(B) Nylon	
	(C) Melamine	(D) Terylene	
56.	The process of heating coal in the absence of ai (A) fractional distillation (C) destructive distillation	r is called (B) distillation (D) none of these	
57.	Roasting is generally done in case of the followir (A) oxide ores (C) sulphide ores	ng ores: (B) silicate ores (D) carbonate ores	
58.	Monomeric units of bakelite are phenol and (A) acetaldehyde (C) acetone	(B) formaldehyde(D) none of these	
59.	Which of the following can be used as a plasticiz (A) Coconut oil	rer? (B) Mustard oil	
	(C) Castor oil	(D) Pine oil	
60.	Bone charcoal is used in sugar industry		
	(A) As paint	(B) for decolourising	
	(C) As reducing agent	(D) As an oxidising agent	
Space for Rough Work			

MATHEMATICS - (PART - C)

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.

Space for Rough Work			
	(A) 9 (C) 11	(B) 10 (D) infinite	
66.	How many rational numbers exist between -5 ar		
	(C) 60 cm	(D) 72 cm	
	(A) 44 cm	(B) 56 cm	
65.	Diagonals of a rhombus are 18cm and 24cm res	spectively. Which of the following is its perimeter?	
	(C) -8	(D) –1	
	(A) 16 (C) –8	(B) 8	
64.	$\left\{ \left(-2\right)^{(-2)} \right\}^{(-2)}$ is equal to:		
	(C) 21%	(D) 100%	
	11, the profit percent would have been:(A) 10%	(B) 11%	
63.	If I would have purchased 11 articles for Rs. 10) and sold all the articles at the rate of 10 for Rs.	
	(C) Rs. 10000	(D) Rs. 1000	
02.	4% per annum is Rs. 80, the sum is: (A) Rs. 5000	(B) Rs. 50000	
62.	If the difference between the simple and compo	und interests on a sum of money for 2 years at	
	(A) Rs. 10 loss (C) Rs. 90 loss	(B) Rs. 10 profit (D) Rs. 90 profit	
61.	A radio is sold for Rs. 990 at a profit of 10%. We had it been sold for Rs. 890?	hat would have been the actual profit or loss on it,	

BIOLOGY - (PART - D)

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.	 mode of transmission. (A) Citrus canker – Virus – Water (B) Rust of wheat – Bacteria – Air (C) Yellow vein mosaic of Bhindi – Virus – Insec (D) Both (B) and (C) 		
68.	To preserve jams and squashes from microorga (A) Sodium benzoate and Sodium metabisulphit (B) Sodium peroxide (C) Sodium bicarbonate (D) Sodium hypochloride		
69.	Name the science of practicing farming: (A) Genetics (C) Agriculture	(B) Biochemistry (D) Physiology	
70.	An important ingredient of rava (sooji), idlis and (A) Cheese (C) Curd	bhaturas is (B) Milk (D) Butter	
71.	The functional unit of life is: (A) Cell (C) Egg	(B) Nucleus (D) None of these	
72.	The management and care of farm animals by h (A) Granary (C) Poultry farms	numan for profit is known as (B) Animal husbandry (D) Warehouse	
Space for Rough Work			

Recommended Time: 50 Minutes for Section – IV

Section – IV

PHYSICS - (PART - A)

This part contains **5** *Multiple Choice Questions* number **73** to **77**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

 potential difference across th (A) 1 : 1 (B) 75. Which one of the following is (A) Force of gravity (C) Magnetic force 76. A and B are two objects with (A) A has more inertia than B (C) A and B are of the same 77. Three resistors are connected 	(D) 2.0 A	Space for Rough Work							
 potential difference across th (A) 1 : 1 (B) 75. Which one of the following is (A) Force of gravity (C) Magnetic force 76. A and B are two objects with (A) A has more inertia than I 	ed to a 10 V battery as shown the current through the 2.0 (B) 0.50	$\begin{array}{c} \Omega \\ 10 \sqrt{\pm} \\ A \end{array}$	4.0 Ω 						
 potential difference across th (A) 1 : 1 (B) 75. Which one of the following is (A) Force of gravity 		s more inertia than A of the above is true.	100						
potential difference across the	(B) Force	e of friction rostatic force							
		in parallel across a batte (D) 4:3	ery. The ratio of						
 73. When a force of one Newt moves with (A) speed of 1 m./s (C) acceleration of 10 m/s² 		that is able to move fre d of 1 km/s eration of 1 m/s ² .	eely, the object						

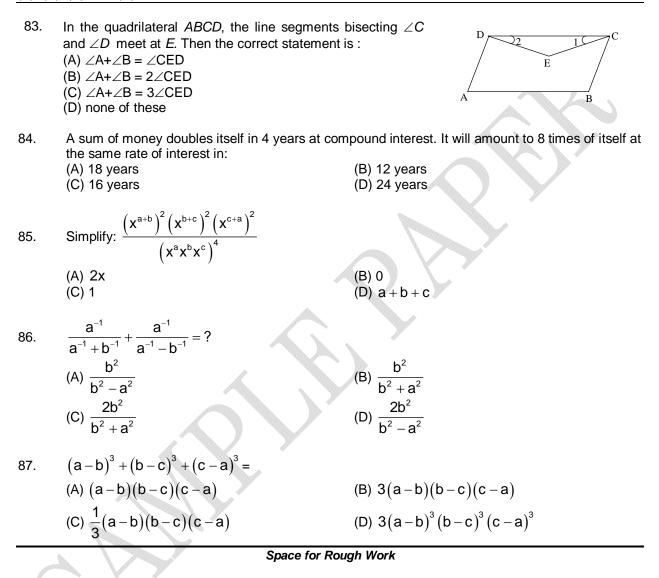
CHEMISTRY - (PART - B)

This part contains **5** *Multiple Choice Questions* number **78** to **82**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

78.	Vhich of the following is a macromolecule but NOT a polymer?						
	(A) Chlorophyll	(B) Protein					
	(C) Starch	(D) Cellulose					
79.	The reducing agent in thermite process is (A) Al (C) BaO ₂	(B) Mg (D) MnO ₂					
80.	Cinnabar is an ore of which metal? (A) Hg	(B) Pb					
	(C) Fe	(D) Cu					
81.	Amide linkage is present in						
	(A) Terylene	(B) Poly vinyl chloride					
	(C) Rayon	(D) Nylon					
82.	The reactivities of iron, magnesium, sodium and zinc towards water are in the order						
	(A) Fe > Mg > Na > Zn	(B) $Zn > Na > Mg > Fe$					
	(C) Na > Mg > Zn > Fe	(D) Mg > Na > Fe > Zn					
Space for Pough Work							

MATHEMATICS – (PART – C)

This part contains **5** *Multiple Choice Questions* number **83** to **87**. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.



PHYSICS - (PART - D)

This part contains **3 Numerical Based Questions** number **88 to 90**. Each question has **Single Digit Answer 0 to 9**.

- 88. Two particles A and B of masses 20 g and 30 g respectively are at rest at a certain time. Because of the forces exerted by them on each other, the particles start moving. At a given instant, particle A is found to move towards east with a velocity of 6 cm/sec. What is the velocity of particle B at this instant (in cm/s)?
- 89. What is the maximum resistance which can be made using five resistors each of $1/5 \Omega$?
- 90. A given volume of a liquid weighs the same as water of double volume weighs. The relative density of the liquid is

CHEMISTRY - (PART - E)

This part contains **3 Numerical Based Questions** number **91 to 93**. Each question has **Single Digit Answer 0 to 9**.

- 91. Number of possible reactions out of the following is: $Cu + 2AgNO_3 \longrightarrow 2Ag + Cu(NO_3)_2$ $Cu + ZnSO_4 \longrightarrow CuSO_4 + Zn$ $Mg + CuSO_4 \longrightarrow MgSO_4 + Cu$ $Zn + PbSO_4 \longrightarrow ZnSO_4 + Pb$
- 92. The given reaction represents formation of iron from its oxide: $Fe_2O_3 + xC \longrightarrow 2Fe + xCO$ Here, x is:
- 93. Amongst the following, the total number of thermoplastics is polyester, bakelite, polythene, PVC, Teflon, PAN, nylon 6, melamine-formaldehyde resin

MATHEMATICS - (PART - F)

This part contains **3 Numerical Based Questions** number **94 to 96**. Each question has **Single Digit Answer 0 to 9**.

94. If
$$a + b + c = 0$$
, then find the value of $\left(\frac{a+b}{c} + \frac{b+c}{a} + \frac{c+a}{b}\right)\left(\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}\right)$

95. If $a^2 + b^2 + c^2 + 3 = 2(a + b + c)$ then find the value of (a + b + c)

96. If
$$x = 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}}$$
, then find the value of $2x + \frac{7}{4}$

FIITJEE SAMPLE PAPER – 2020 (FIITJEE Talent Reward Exam-2020)

for students presently in

Class 8 (Paper 2) ANSWERS

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