ALLEN

ALLEN DIGITAL

SCHOLARSHIP

ADMISSION TEST (ADSAT)

SYLLABUS & PATTERN CLASS-X (MOVING TO CLASS XI NEET)

PHYSICS

1. Reflection of Light
2. Refraction of Light
3. Human Eye and the Colourful World
4. Electricity
5. Magnetic Effects of Electric Current

CHEMISTRY

1. Chemical Reactions and Equations
2. Acids, Bases and Salts
3. Metals and Non-metals
4. Carbon and its Compounds

BIOLOGY

1. Nutrition
2. Respiration
3. Transportation
4. Excretion
5. Control and Coordination
6. How Do Organisms Reproduce?
7. Heredity and Evolution
8. Our Environment

IQ

1. Blood Relation
2. Series
3. Non-Verbal Series
4. Analogy
5. Coding-Decoding
6. Counting of Figure
7. Cube and Dice
8. Direction Sense
9. Embedded Figure
10. Mathematical Operation
11. Insert the Missing Character
12. Number Ranking
13. Puzzle Test
14. Sitting Arrangement
15. Syllogism
16. Calendar
17. Clock
18. Non-Verbal Analogy

EXAM PATTERN

PAPER MODE: ONLINE
Part-1 Subject: IQ
Part-2 Subjects: Physics; Chemistry; Biology;

MARKING SCHEME
+4 for correct answer, -1 for wrong answer
No negative marking in Part-1

QUESTION DISTRIBUTION
IQ: 30, Physics: 30, Chemistry: 30, Biology: 30,

QUESTION TYPE: Single Choice Questions
DURATION OF EXAM: 120 Minutes

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SAMPLE QUESTIONS

ADSAT

(Allen Digital Scholarship Admission Test)

Pre-Nurture and Career Foundation Division

CLASS X (NEET)

(For Class X moving to Class XI)

READ THE INSTRUCTIONS CAREFULLY

Paper Instructions:

1. This paper is divided into two sections: **Section-A & Section-B**.

2. The questions appearing in **Section-A** are based on **Mental Ability.**

   The questions appearing in **Section-B** are based on **Physics, Chemistry and Biology.**

3. In **Section-A,** there are **4 marks** for each correct answer and **no negative marking**. There are **4 marks** for each correct answer and **–1 negative marking** for each wrong answer in **Section-B**.

4. Use of Calculator is Not Allowed.

Your Hard Work Leads to Strong Foundation

ALLEN Digital

IMPORTANT INSTRUCTIONS

A. Mandatory for the student to ensure the following for taking the test:

1. Keep your camera switched on at all times while you take the test. Failing to keep the camera on will lead to disqualification.

2. Face the camera while taking the exam and ensure your front profile, up till your shoulder at least is visible. The background should be plain with no photo frames or designs.

3. Ensure your microphone is on and there is no disturbance in the surrounding and you're sitting in a quiet room.

4. Other than one blank sheet of paper and a pen, there should not be any book or stationery in the area where exam is being attempted.

B. Ensure the following for a smooth exam taking experience

1. You have good internet speed- 521 kbps at least for a smooth network. In case of internet issues, the timer will not be paused. ADSAT is not responsible for any such issues.

2. Keep your device connected and ensure there is enough charge.

3. In case of a power outage, ensure the internet and device can still operate and not disconnect from the exam taking experience.

C. You can be disqualified if

1. Your microphone or camera is switched off.

2. The candidate appearing for the exam is not the same as the one registered.

3. Other than the candidate there are other people in the vicinity.

4. There is excessive background noise.

5. Student tries to connect a pen-drive or similar devices while taking the exam.

6. Student tries to browse other site or uses other devices.

D. General Instructions

1. Join the test link 30 mins prior to the exam time to avoid any technical issues and to read the instructions. Test link will be shared via Email and SMS.

2. Remember to submit the test at the end of the exam.

3. The test will be conducted in proctored mode. Ensure that all the above rules are strictly followed.

SECTION-A

MENTAL ABILITY

This section contains 18 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and there is NO negative marking.
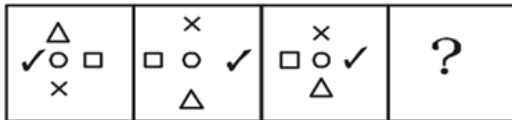
1 B is father of Q. B has only two children. Q is the brother of R. R is the daughter of P. A is the granddaughter of P. S is the father of A. How is S related to Q?

(1) Son

(2) Son-in-law

(3) Brother

(4) Brother-in-law

2 Find the missing term.
5, 6, 9, 15, ?, 40,

(1) 2   (2) 25

(3) 27   (4) 33

3 Select a figure from among the answer figures which will continue the same series as established by the problem figure.

4 Choose the correct option which shows the same relation.
Reading : Knowledge :: Work : ?

(1) Experience

(2) Engagement

(3) Employment

(4) Experiment

5 From the given figures find the suitable figure that can replace the question mark.

6 In a certain language, CAT = 12, MAT = 17, then what is the value of JAM =?

(1) 15   (2) 16   (3) 17   (4) 12

7 How many triangles are there in the following figure ?
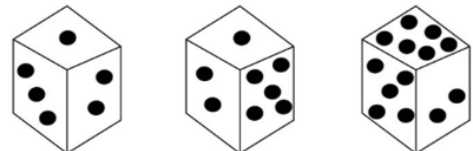

(1) 5   (2) 6   (3) 8   (4) 10

8 A cube is cut in two equal parts along a plane parallel to one of its faces. One piece is then coloured red on the two larger faces and green on the remaining, while the other is coloured green on two smaller adjacent faces and red on the remaining. Each is then cut into 32 cubes of same size and mixed up.
How many cubes have only one coloured face each ?

(1) 32   (2) 8   (3) 16   (4) 0

9 Below there are three different positions of a dice. Find the number of dots on the face opposite to the face with one dot.

(i)   (ii)   (iii)

(1) 2   (2) 3   (3) 4   (4) 6

10 Point A is 30 m to the east of point B. Point C is 10 m to the south of point A. Point D is 15 m to the west of point C. Point E is exactly in the middle of the points D and F. Points D, E and F lie in a straight line. The length of the DEF is 20 m. Point F is to the north of point D. Point G is 15 m to the east of Point F. How far and in which direction is point G from point A?

(1) 10 m, South

(2) 15 m, North

(3) 10 m, North

(4) 10 m, East

11 In the following question, you are given a figure by four alternative figures (1), (2), (3) and (4) such that figure is embedded in one of them. Find out the alternative figure which contains figure as its part.

(1)　　　　(2)

(3)　　　　(4)

12 Which of the following interchange of sign would make the given equation correct?
$$64 - 8 \times 9 \div 8 = 64$$

(1) + and −　　　　(2) ÷ and ×

(3) + and ÷　　　　(4) − and ÷

13 What number should replace the question mark in the given figure?

18	24	32
12	14	16
3	?	4
72	112	128

(1) 2　　　　(2) 3

(3) 4　　　　(4) 5

14 This question is based on five three-digit numbers given below.
438, 285, 716, 342, 857
If '1' is added to the middle digit of each of the above number and '1' is subtracted from the first digit of each of the above numbers, which of the following will be the third digit of the second highest number?

(1) 8　　　　(2) 6

(3) 5　　　　(4) 2

15 P, Q, R, S and T are sitting in a line facing West. P and Q are sitting together. R is sitting at south end and S is sitting at North end. T is neighbour of Q and R. Who is sitting at the middle?

(1) P　　　　(2) Q

(3) R　　　　(4) S

16 In the question below are two/three/four statements followed by two/three/four conclusions. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow from the given statements, disregarding commonly known facts.
Statements:
All pens are pencils
No pencil is an eraser
Conclusions:
I. No eraser is a pen
II. No pen is an eraser

(1) Conclusion I follows.

(2) Conclusion II follows.

(3) If either conclusion I or conclusion II follows

(4) Both conclusion I and conclusion II follow.

17 P was born on August 6, 1996. The same year Republic Day was celebrated on Friday. On which day was P born?
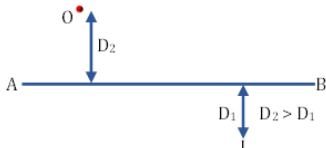
(1) Monday　　　　(2) Wednesday

(3) Tuesday　　　　(4) Friday

18 The angle between the minute hand and the hour hand of a clock when the time is 3:40, is

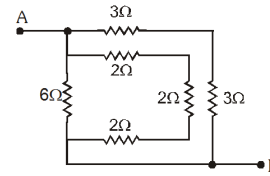(1) 140°　　　　(2) 130°

(3) 125°　　　　(4) 120°
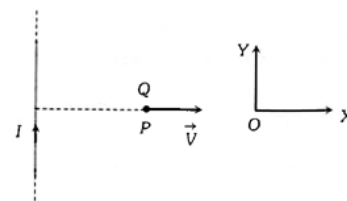
SECTION-B

PHYSICS

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.

19 Which of the following statements is correct?

(1) A person with myopia can see nearby objects clearly.

(2) A person with hypermetropia can see nearby objects clearly.

(3) A person with myopia can see distant objects clearly.

(4) A person with hypermetropia cannot see distant objects clearly.

20 In the figure shown, the image of a real object is formed at point I. AB is the principal axis of the mirror. The mirror must be :

(1) concave & placed towards right of I

(2) concave & placed towards left of I

(3) convex and placed towards right of I

(4) convex & placed towards left of I.

21 Where should an object be placed before a convex lens of focal length 10 cm be placed to get a virtual image at a distance of 30 cm from the lens?

(1) at 15 cm from the lens

(2) at 7.5 cm from the lens

(3) at 22.5 from the lens

(4) at 30 cm from the lens

22 A beam of light is incident at 60° on a plane surface. The reflected and refracted rays are perpendicular to each other, then refractive index of the surface is:

(1) $\sqrt{3}$

(2) $\dfrac{1}{\sqrt{3}}$

(3) $\dfrac{1}{2\sqrt{3}}$

(4) None of these

23 Equivalent resistance between two points A and B in circuit will be :

(1) 2 Ω   (2) 6 Ω   (3) 3 Ω   (4) 8 Ω

24 A bulb rated 240 V, 100 Ω is connected to a 20 V supply. What can be inferred?

(1) The bulb fuses.

(2) The bulb lights up but it is dim.

(3) The bulb lights up to normal brightness.

(4) The bulb lights up initially and then it fuses.

25 A very long straight wire carries a current I. At the instant when a charge +Q at point P have velocity $\vec{V}$, as shown, the force on the charge is :-

(1) Opposite to OX   (2) Along OX

(3) Opposite to OY   (4) Along OY

26 Magnetic field due to current throuogh a .... is similar to magnetic field produced by a bar magnet.

(1) circular loop of conducting wire.

(2) rectangular loop of conducting wire.

(3) solenoid.

(4) thick copper wire.

27 A hunter wants to shoot a fish whose image can be seen through clear water. It is to be aimed

(1) above the image of fish

(2) below the image of fish

(3) directly towards the image

(4) in any direction

28 The speed of light in diamond is $\dfrac{2}{5}$ of its speed in air. The refractive index of diamond is

(1) 1.4   (2) 2.5   (3) 5   (4) 1.2

CHEMISTRY

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.

29 Complete the following analogy with respect to the change of colour of indicators in different mediums.

Methyl orange : Changes from orange to yellow :: Phenolphthalein : ....

(1) Remains pink

(2) Remains colourless

(3) Changes from colourless to pink

(4) Changes from pink to colourless

30 Nature of a solution depends on its H_3O^+ but pH notation is used to express the nature of solution because

(1) H_3O^+ value is very high in order to express it as simple number

(2) H_3O^+ and OH^- values are same to overcome confusion.

(3) H_3O^+ value is extremely small, in order to express the nature of solution as a simple whole number

(4) None of above

31 Formation of carbon disulphide from carbon and sulphur takes place by

(1) absorption of heat

(2) evolution of heat

(3) no change in heat content

(4) none of the above

32 Which of the statements about the reaction below are incorrect ?

$$2PbO(s) + C(s) \rightarrow 2Pb(s) + CO_2(g)$$

(i) Lead is getting reduced .

(ii) Carbon dioxide is getting oxidised.

(iii) Carbon is getting oxidised.

(iv) Lead oxide is getting reduced.

(1) (i) and (ii)　　　(2) (i) and (iii)

(3) (i), (ii) and (iii)　　(4) All of the above

33 Which of the following pairs will give displacement reactions ?

(1) $ZnSO_4$ solution and Aluminium metal

(2) $MgCl_2$ solution and Aluminium metal

(3) $FeSO_4$ solution and Silver metal

(4) $NaNO_3$ solution and Copper metal

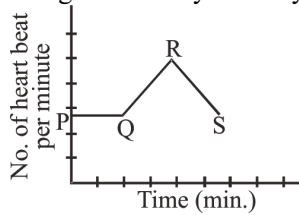**34** Match column A with column B and select the correct option.

Column-A		Column-B	
[Ore]		[Nature of ore]	
(a)	Copper glance	(i)	Sulphate ore
(b)	Calamine	(ii)	Halide ore
(c)	Rock salt	(iii)	Sulphide ore
(d)	Epsom salt	(iv)	Carbonate ore

(1) a → i;b → ii;c → iii;d → iv

(2) a → iv;b → ii;c → iii;d → i

(3) a → iii;b → iv;c → ii;d → i

(4) a → iv;b → i;c → ii;d → iii

35 The name of the compound, $CH_3 - CH_2 - CHO$ is

(1) Propanal　　　(2) Propanone

(3) Ethanol　　　(4) Ethanal

36 Oxidation product of methyl alcohol is _____.

(1) Acetic acid　　(2) Methyl amine

(3) Formic acid　　(4) Ethyl acetate

37 Carbon forms four covalent bonds by sharing its four valence electrons with four univalent atoms. eg: hydrogen. After the formation of four bonds, the carbon attains the electronic configuration of

(1) Lithium　　　(2) Neon

(3) Argon　　　(4) Krypton

38 Which of the following metals exist in their native state in nature?

(i) Cu　　(ii) Au　　(iii) Zn　　(iv) Ag

(1) (i) and (ii)

(2) (ii) and (iii)

(3) (ii) and (iv)

(4) (iii) and (iv)

BIOLOGY

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.
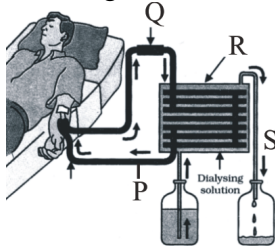
39. The given graph shows the change in a person's heart beat during the activity of a day.

What does PQ and QR probably represent?

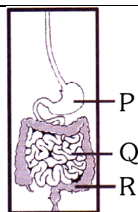|	PQ	QR
(1)	Jogging	Swimming
(2)	Exercise	Eating
(3)	Exercise	Sitting
(4)	Sitting	Exercise

40. Which of the following functions as kidneys ?

(1) P (2) Q (3) R (4) S

41. In the given human digestive system, processes I, II and III occur in the parts labelled P, Q and R.

I. Water is absorbed from undigested food
II. End products of digestion are absorbed
III. Gastric juice that digests protein is secreted

Which of the following combination of organs of digestive system and their functions is correct ?

(1) P-II, Q-III, R-I (2) P-III, Q-II, R-I
(3) P-II, Q-I, R-III (4) P-III, Q-I, R-II

42. What is the function of the villi present in small intestine ?

(1) to moisten food
(2) to absorb water from chyme
(3) to absorb digested nutrients
(4) to produce Vitamin K

43. Blood does not clot inside blood vessels due to the presence of

(1) heparin (2) vitamin B
(3) vitamin A (4) vitamin C

44. A girdled plant in which phloem is removed, may survive for some time but it will eventually die, because

(1) water will not move downwards.
(2) water will not move upwards.
(3) sugars and other organic materials will not move downwards.
(4) sugars and other organic materials will not move upwards.

45. Which of the following statements is false?

(1) In double circulation the blood passes twice through the heart in one cycle.
(2) Pulmonary artery carries oxygenated blood and pulmonary vein carries deoxygenated blood.
(3) Pulmonary circulation is the circulation in between heart and lungs.
(4) Systemic circulation is in between heart and remaining parts of the body except lungs.

46. Respiration and photosynthesis are just the

(1) Opposite processes (2) Similar processes
(3) Burning processes (4) None of these

47. Anaerobic breakdown of glucose in our muscles produces :–

(1) Pyruvate (2) Lactic acid
(3) Ethyl alcohol (4) Oxalic acid

48. In anaerobic respiration :–

(1) O_2 is given out (2) CO_2 is given out
(3) CO_2 is taken in (4) O_2 is taken in

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OBJECTIVE

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A.	4	2	1	1	3	4	4	3	4	3	2	4	2	2	2	4	3	2	1	1
Q.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A.	1	1	1	2	4	3	2	2	3	3	1	1	1	3	1	3	2	3	4	3
Q.	41	42	43	44	45	46	47	48												
A.	2	3	1	3	2	1	2	2												

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