ALLEN

ALLEN DIGITAL
SCHOLARSHIP
ADMISSION
TEST (ADSAT)

SYLLABUS & PATTERN CLASS-VIII (MOVING TO CLASS IX)

PHYSICS

1. Force and Pressure
2. Friction
3. Sound
4. Chemical Effects of Electric Current
5. Some Natural Phenomena
6. Light

CHEMISTRY

1. Coal and Petroleum
2. Combustion and Flame

BIOLOGY

1. Crop Production and Management
2. Microorganisms : Friend and Foe
3. Conservation of Plants and Animals
4. Reproduction in Animals
5. Reaching the Age of Adolescence

MATHS

1. Algebraic Expressions, Identities and Factorisation
2. Rational Numbers
3. Introduction to Graphs and Data Handling
4. Exponents and Powers
5. Understanding Quadrilaterals
6. Comparing Quantities
7. Squares and Square Roots
8. Linear Equations in One Variable
9. Representation of Three Dimensional Figures
10. Cubes and Cube Roots
11. Mensuration

IQ

1. Blood Relation
2. Coding-Decoding
3. Counting of Figure
4. Cube and Dice
5. Direction Sense
6. Embedded Figure
7. Insert the Missing Character
8. Mathematical Operation
9. Mirror Image
10. Non-Verbal Series
11. Number Ranking
12. Series
13. Venn-Diagram
14. Water Image

EXAM PATTERN

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

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

QUESTION DISTRIBUTION
IQ: 20, Physics: 25, Chemistry: 25, Biology: 25, Mathematics: 25

QUESTION TYPE: Single Choice Questions

DURATION OF EXAM: 120 Minutes

ALLEN

ADSAT

(Allen Digital Scholarship Admission Test)

Pre-Nurture and Career Foundation Division

CLASS VIII

(For Class VIII moving to Class IX)

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, Biology and Mathematics**.

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.

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.

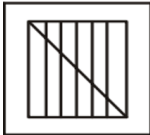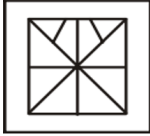6. Student tries to browse other site or uses other devices.

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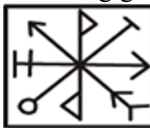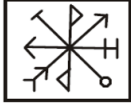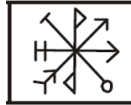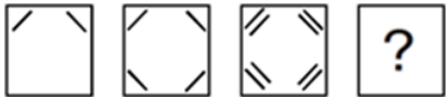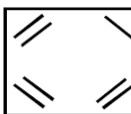
1. Join the test link 30 mins prior to the exam time to avoid any technical issues and to read the instructions. Test link will be shared via Email and SMS.

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 15 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 If MACHINE is coded as 19-7-9-14-15-20-11, how will you code DANGER ?

   (1) 10-7-20-13-11-24

   (2) 11-7-20-16-11-24

   (3) 13-7-20-9-11-25

   (4) 13-7-20-10-11-25

2 Starting from a point P, Rajeev travels 7 km towards East and turns left and travels 8 km. Then again, he turns to left by 45° and moves straight. Which direction is he facing now?

   (1) South-West

   (2) North-West

   (3) South-East

   (4) North-East

3 Find the answer figure in which the question figure is embedded.

   (1)   (2)

   (3)   (4)

4 Select the correct set of symbols which will fit in the given equation?

$$24 \_ 4 \_ 5 \_ 4$$

   (1) $\times + \times$ (2) $= \times +$

   (3) $\times + =$ (4) $+ = \times$

5 Find the correct option for the mirror image of the following given problem figure.

   (1)   (2)

   (3)   (4)

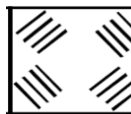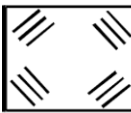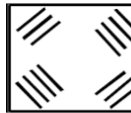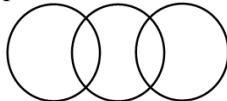**6** Rakesh's position from the left in a row of students is 9th and Satish's position is 18th from the right. Both of them interchange their positions and Satish becomes 24th from the right. How many students are there in the row?

   (1) 33   (2) 44

   (3) 42   (4) 32

7 Find the missing term in the following series.
AYD, BVF, DRH, ?, KGL.

   (1) FMI   (2) GMJ   (3) HLK   (4) GUJ

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

   (1)   (2)

   (3)   (4)

9 Which of the following groups in the given Venn diagram best represents?

   (1) Principal, Male, Female

   (2) Men, teachers, tools

   (3) Water, salt, soda

   (4) Boy, girl, groom

10 In the Venn diagram given below, the circle represents 'North Indian', the triangle represents 'Pianists', the rectangle represents 'Males' and the square represents 'Engineers'. The numbers given in the diagram represents number of persons of that particular category. Who among the following is a female, North Indian, Engineer?
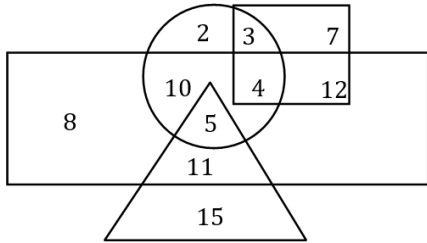
(1) 5   (2) 4   (3) 3   (4) 9

11 A man said to a woman, "The only sister of your brother is my mother". How is that man related to that woman?

(1) Father   (2) Son

(3) Husband   (4) Brother

12 P is the brother of Q and R. S is R's mother. T is P's father. Which of the following statements cannot be definitely true ?

(1) T is Q's father

(2) S is P's mother

(3) P is S's son

(4) Q is T's son

13 How many triangles are there in the given figure ?

(1) 29   (2) 38

(3) 45   (4) 42

14 What number should replace the question mark in the given figure?
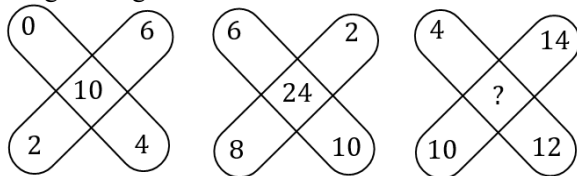
(1) 36   (2) 48

(3) 38   (4) 30

15 Find out how many cubes are there in given figure.

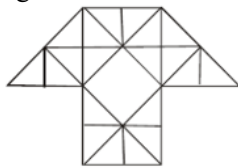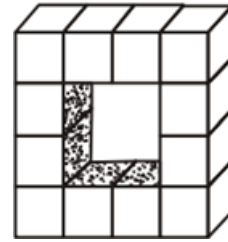(1) 10   (2) 8

(3) 16   (4) 12

SECTION-B

PHYSICS

This section contains 8 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.

16 As an object is moved from a distant location toward the center of curvature of a concave mirror its image

(1) remains virtual and becomes smaller

(2) remains virtual and becomes larger

(3) remains real and becomes smaller

(4) remains real and becomes larger

17 If an object oscillates 25 times in one second, what would be its frequency ?

(1) $1 \, Hz$ (2) $\frac{1}{2} \, Hz$

(3) $25 \, Hz$ (4) $50 \, Hz$

18 Find the velocity of the wave shown in the figure below.
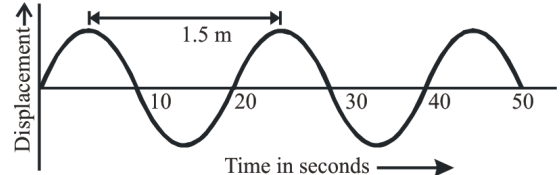
(1) $7.5 \times 10^{-2} \, m/s$

(2) $1.5 \times 10^2 \, m/s$

(3) $2.75 \times 10^{-3} \, m/s$

(4) $0.75 \times 10^{-2} \, m/s$

19. A boy rolls a rubber ball on a wooden surface. The ball travels as short distance before coming to rest. To make the same ball travel longer distance before coming to rest, he may

(1) spread a carpet on the wooden surface.

(2) cover the ball with a piece of cloth.

(3) sprinkle talcum powder on the wooden surface.

(4) None of the above

20. Find the maximum pressure of a brick exerted on floor due to placing from changing faces
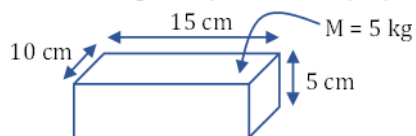
(1) 100 Pa   (2) 1000 Pa

(3) 10000 Pa   (4) 10 Pa

21. An optician holds a test card 50 cm behind a person. The person then looks in the plane mirror which is 100 cm away. How far away from the person's eyes is the image of the test card?

(1) 100 cm   (2) 150 cm

(3) 200 cm   (4) 250 cm

22. As we move towards a plane mirror

(1) size of image goes on decreasing

(2) size of image goes on increasing

(3) size of image remain same

(4) size of image first increase then decrease.

23. If the gold leaves of an electroscope diverge still apart when a test body is brought near it, then the test body has

(1) a small amount of charge

(2) no charge

(3) a charge of the same nature as already on the leaves

(4) a charge of the opposite nature as already on the leaves.

CHEMISTRY
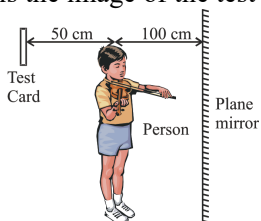
This section contains 8 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.

24. I am an exhaustible natural resource. I am defined as a sedimentary rock. I am formed from dead remains of living organisms on earth, who am I?

(1) Coke

(2) Petroleum

(3) Coal

(4) Coal tar

25. In which one of the following situations a chemical reaction does not occur?

(1) Common salt is exposed to air

(2) Coal is burnt in air

(3) Sodium is placed in water

(4) Iron is kept in moist air

26. Which of the following is not an attribute of a good fuel?

(1) High calorific value

(2) High ignition temperature

(3) Easy to store

(4) Cheap and readily available

27. Which of the following is not a combustible substance?

(1) Kerosene   (2) Wood

(3) Paper   (4) Rock

28. Incomplete combustion of fuels give

(1) CO_2 gas   (2) CO gas

(3) $CO + H_2$ (4) None of these

29. Oldest form of fossil coal is

(1) Lignite   (2) Anthracite

(3) Coke   (4) Charcoal

30. Which of the following is an example of gaseous fuel?

(1) Petrol   (2) Wood

(3) Gobar gas   (4) Coke

31 Petroleum Conservation Research Association, under the Ministry of Petroleum and Natural Gas, does not encourage

(1) Driving at a very high speed.

(2) Maintenance of vehicle by regularly servicing.

(3) Maintaining correct levels of pressure in the tyres.

(4) Switching off the vehicle engine at traffic intersections.

BIOLOGY

This section contains 8 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.
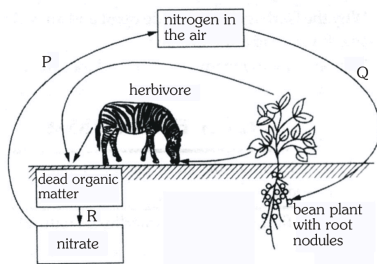
32 Which arrow identifies nitrogen fixation and denitrification respectively ?

	Nitrogen fixation	Denitrification
(1)	P	Q
(2)	P	R
(3)	Q	P
(4)	Q	R

33 Read the following paragraph and choose the correct sequence of words to be filled in the gaps of the paragraph.

The changes which occur at adolescence are controlled by _____ . These are secretions from _____ glands. The _____ begins to release from the testes at the onset of puberty.

(1) Chemical substances, thyroid, insulin

(2) Hormones, endocrine, progesterone

(3) Chemical substances, pituitary, sperms

(4) Hormones, endocrine, testosterone

34 Lichens are structures made up of two different species __(i)__ and __(ii)__. They are an example of __(iii)__ relationship. Lichens are used as indicator for __(iv)__ pollution.
Select the correct sequence of words to fill up the blanks in the given paragraph.

(1) (i) Algae, (ii) Bacteria, (iii) Symbiotic, (iv) SO_2

(2) (i) Algae, (ii) Fungus, (iii) Saprotrophic, (iv) CO_2

(3) (i) Fungus, (ii) Bacteria, (iii) Symbiotic, (iv) SO_2

(4) (i) Algae, (ii) Fungus, (iii) Symbiotic, (iv) SO_2

35 Read the following statements with few blanks and select the option that correctly fills any three of these blanks.
(i) __P__ is the transformation of a larval form into an adult animal.
(ii) Egg laying animals are called __Q__ whereas animals which give birth to babies are known as __R__.
(iii) Testes are __S__ sex organs of males which lie within __T__.
iv) The clone sheep __U__ was developed by using cells from __V__ and Scottish Blackface sheep.

(1) Q - Oviparous, S - Secondary, U - Rosie

(2) P - Metamorphosis, R - Viviparous, V-Finn Dorset

(3) Q - Viviparous, T - Seminal vesicle, U - Dolly

(4) R - Oviparous, S - Accessory, T - Scrotum

36 Which of the following statements is incorrect for the organism shown in the figure?

(1) This organism became extinct due to over exploitation.

(2) The category to which this organism belongs also contains Quagga and Tasmanian wolf.

(3) This organism is listed in Red Data Book.

(4) This organism is critically endangered due to continuous illegal poaching.

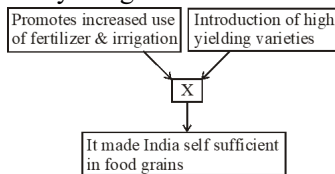**37** Refer to the given figure and select the correct statement regarding it.

(1) It is a bacterium which causes various diseases in plants.

(2) It is a type of virus which infects bacteria.

(3) It is a bacterium which kills viruses.

(4) It can multiply on its own.

38 Identify the wrongly matched pair among the following.

(1) Kala-azar - Protozoa

(2) Hepatitis - Virus

(3) Filariasis - Protozoa

(4) Cholera - Bacteria

39 Study the given flow chart.

Promotes increased use of fertilizer & irrigation	Introduction of high yielding varieties

↓

X

↓

It made India self sufficient in food grains

Based on the given flow chart, what could 'X' be?

(1) Green revolution

(2) Agronomy

(3) Raising of live stock

(4) Horticulture

MATHEMATICS

This section contains 11 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.

40 If $\dfrac{37}{50}$ is a rational number midway between $\dfrac{a}{25}$ and $\dfrac{19}{25}$, then the value of a is

(1) $\dfrac{12}{3} \times 34$ (2) $27 \times \dfrac{2}{3}$

(3) $12 \times \dfrac{18}{4}$ (4) 24

41 The ages of Ruchi and Suchi are in the ratio 6 : 1. The sum of their ages is 56 years. What is the ratio of their ages after 6 years ?

(1) 27 : 7   (2) 26 : 9

(3) 25 : 3   (4) 29 : 7

42 If $A = -126\,m^6n^2x$; $B = 6m^2nx$, $C = -64m^6n^2x$ and $D = 8m^2nx$, then $(A \div B) + (C \div D)$ is

(1) $29\ m^4/n$

(2) $-29m^4n$

(3) $-28m^4/n$

(4) $28m^4/n$

43 Find the value of

$$\left(\sqrt{\dfrac{625}{4356}} + \sqrt{\dfrac{576}{1089}} \right) \times \left(\dfrac{66}{\sqrt{19600} + \sqrt{36}} \right).$$

(1) $\dfrac{7}{15}$ (2) $\dfrac{9}{53}$

(3) $\dfrac{1}{2}$ (4) $\dfrac{79}{33}$

44 If $x = (3^{-2} - 3^{-3})$, $y = (3^{-3} - 3^{-4})$ and $z = (3^{-4} - 3^{-2})$ then find the value of 81 xyz.

(1) $\dfrac{-32}{2187}$ (2) $\dfrac{32}{177147}$

(3) $\dfrac{91}{2187}$ (4) $\dfrac{61}{177147}$

45
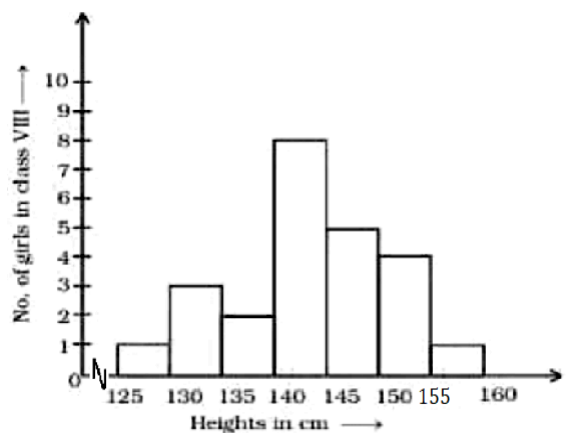
Observe the histogram given above. The number of girls having height 145 cm and above is

(1) 5   (2) 10

(3) 17   (4) 19

46. Sum of the digits of a two digit number is 12. The given number exceeds the number obtained by interchanging the digits by 36. The given number is :-

(1) 81   (2) 82

(3) 83   (4) 84

47. The lengths of the diagonals of a rhombus are 16 cm and 12 cm. The length of each side of the rhombus is:

(1) 10 cm   (2) 12 cm

(3) 9 cm   (4) 8 cm

48. $\sqrt[3]{15.625} + \sqrt[3]{0.015625} - \sqrt{1.5625} = ?$

(1) 0.15   (2) 2.5

(3) 1.5   (4) 0.25

49. If the sum of the interior angles of a polygon is 5400°, then the number of sides of polygon is

(1) 54 sides

(2) 32 sides

(3) 26 sides

(4) 40 sides

50. A CD player was sold at a profit of 10%. Had it been sold for ₹25 more, the profit would have been 12%. Find the cost price of the CD player.

(1) Rs. 1280

(2) Rs. 1250

(3) Rs. 1260

(4) Rs. 1270

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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.	1	2	3	2	3	4	2	2	1	3	2	4	3	3	4	4	3	1	3	3
Q.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A.	4	3	3	3	1	2	4	2	2	3	1	3	4	4	2	4	2	3	1	2
Q.	41	42	43	44	45	46	47	48	49	50										
A.	1	2	3	1	2	4	1	3	2	2										

9610WPF801033240004	*Your Hard Work Leads To Strong Foundation*	Open

HINT – SHEET