

Time: 11.30 a.m. to 1.30 p.m.

CENTRE CODE:

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DATE:

0	3	1	1	2	0	1	9
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EXAM SEAT NO.

3	6	2	0	0	0						
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EXAM SEAT NO. (in words)	three	six	two	zero	zero	zero					
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NATIONAL TALENT SEARCH EXAMINATION 2019-20 (STD. X)
Scholastic Aptitude Test (SAT)

Instructions to the Candidates:

- 1) PART II Scholastic Aptitude Test Time 120 Minutes Maximum Marks 100
- 2) Write your Seat No. both in figures and in words on this Question Booklet (above) as Well as on the Answer Sheet (OMR Sheet) supplied to you.
- 3) Each question carries one Mark.
- 4) All questions are compulsory.
- 5) You have to mark your answers on Answer sheet provided with the Question Booklet. Each question is provided with four alternatives. Answer to each question is to be indicated by **making a dark circle on** the number of the correct alternative in the Answer sheet from amongst those given against the corresponding question in the Question Booklet.
- 6) Rough work can be done any where in the question booklet.
- 7) Extra time of 30 minutes will be allotted to the Physically Handicapped candidate with Defects of vision only.

Please Note the Centre Codes:

- | | |
|-----------------|------|
| 1. Bicholim | 0001 |
| 2. Bardez | 0002 |
| 3. Pernem | 0003 |
| 4. Sattari | 0004 |
| 5. Tiswadi | 0005 |
| 6. Ponda | 0006 |
| 7. Salcete | 0007 |
| 8. Sanguem | 0008 |
| 9. Canacona | 0009 |
| 10. Quepem | 0010 |
| 11. Dharbandora | 0011 |
| 12. Mormugao | 0012 |



SCHOLASTIC APTITUDE TEST

Part II

Std. X

Time: 11.30 am to 1.30 pm

(For question no. 1 to 13 ,Answers are rounded off to the nearest number)

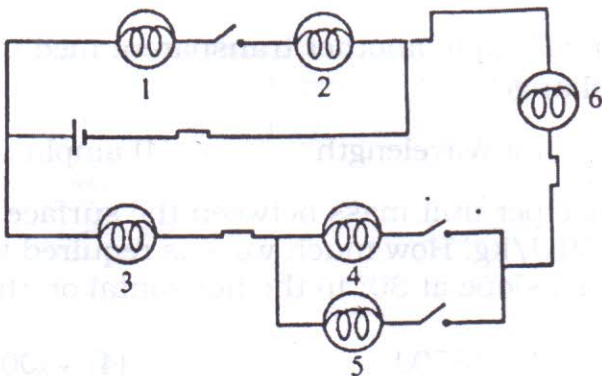
- Q. 1. Two electromagnets are made by wrapping a few turns of wire on similar types of nails and passing through them. The number of turns of the wire wrapped over the two iron nails are in the ratio 4:3. The strength of
- (1) The first electromagnet will be greater
 - (2) The second electro magnet will be greater
 - (3) Both the electromagnets will be equal
 - (4) Electromagnet does not depend on the number of turns
- Q. 2. Two cars P and Q of same mass start from the same location at the same time but on different straight roads. Car P travels on a road that has greater angle of inclination with horizontal compared to the road on which Q travels. At any instant both cars P and Q have the same height above the starting point. If E_P and E_Q are total energies of cars P and Q respectively, then
- (1) $E_P > E_Q$
 - (2) $E_Q = E_P$
 - (3) $E_Q > E_P$
 - (4) Insufficient data
- Q. 3. Temperature of a body can be measured on different scales. The following table shows the temperatures of the various materials measured in X and Y

Materials	X	Y
A	0	32
B	-40	-40
C	30	P
D	80	176

The value of p is

- (1) 76
- (2) 86
- (3) -138
- (4) 119

Q.4. In the electric circuit shown below



- (1) All the bulbs will glow
- (2) Only bulbs 2 and 6 will glow
- (3) Only bulbs 1,3,4 and 5 will glow
- (4) None of the bulb will glow



- Q. 5. Two plane mirrors are placed perpendicular to each other with their reflecting faces inward. A candle is placed between the two mirrors, then the number of images formed will be _____
 (1) 1 (2) 2 (3) 3 (4) infinite
- Q. 6. Which of the following is not a vector quantity?
 (1) Acceleration (2) Momentum (3) Weight (4) pressure
- Q. 7. A body is thrown vertically upward with a velocity V . It returns earth after reaching a height H . The ratio of displacement to the distance covered by a body is _____.
 (1) $2H$ (2) $4H$ (3) 0 (4) Infinite
- Q.8. An electron moving with uniform velocity in x-direction enters a region of uniform magnetic field along y-direction. Which of the following physical quantity/quantities is/are non-zero and remains constant?
 I. Velocity of the electron
 II. Magnitude of momentum of the electron
 III. Force on the electron
 IV. The kinetic energy of the electron
 (1) Only I and II (2) Only III and IV (3) Only II and IV (4) All four
- Q. 9. A convex lens of focal length of 25cm is combined with a second lens such that combination has a power of 2.5 Diopter. Which of the following could be the second lens?
 (1) A concave lens of power 3D (2) A concave lens of power 1.5D
 (3) A convex lens of power 3D (4) A convex lens of power 1.5D
- Q.10. A wire of resistance 20 is stretched by four times its length. The new resistance of the wire is _____.
 (1) 500 (2) 320 (3) 250 (4) 640
- Q.11. A stone is dropped into a lake from a tower 490m height. Assuming the speed of the sound in air is 350 m/s. The sound of a flash will be heard by a man on the tower after
 (1) 20s (2) 150s (3) 11.4s (4) 17.6s
- Q.12. When light travels from one transparent medium to another transparent medium which of the following quantity does not change?
 (1) Frequency (2) Velocity (3) Wavelength (4) amplitude
- Q.13. The gravitational potential energy difference per unit mass between the surface of a planet and a point 100 m above it is 1000 J/kg. How much work is required to be done in moving a 10kg object 100 m on a slope at 30° to the horizontal on this planet?
 (1) 1250J (2) 2500J (3) 4350J (4) 4900J
- Q.14. Prediction of properties of elements with more precision could be made, when elements are arranged on the basis of _____.
 1) Atomic masses 2) Atomic weights 3) Atomic numbers 4) Atomic sizes

