

Aarambh NARAYANA TALENT SCHOLARSHIP EXAM

NTSE 2020 CLASS VI

PART-I

IQ (MENTAL ABILITY)

This section contains **20 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

- 1. In the pattern 1, 4, 9, 16, x^2 ,, what does x represent ?
 - (1) The fifth term in the pattern (2) Final term in the pattern
 - (3) Sum of terms in the pattern (4) Square root of the fifth term in the pattern
- 2. If MONDAY is coded as 123456 amd BELT is coded as 0789. how would you encode the word TOMBAY ?
 - (1) 921056 (2) 460528 (3) 290165 (4) 258702
- 3. A, B, C and D are standing on the four corners of a square field as shown in the adjoining figure.

'A' starts crossing the field diagonally. After walking half the distance, he turns right, walks some distance and turns left. Which direction is 'A' facing now ?



(1) East(2) South-West(3) South-East(4) NorthDirection (Q. 4) : Study the given figure and answer the questions.



4. What is the minimum number of straight lines that is needed to construct the figure ?

(1) 11 (2) 13 (3) 15 (4) 21

- 5. If husband is called wife, wife is called grandfather, grandfather is called grandmother, grandmother is called maternal grandmother, maternal grandmother is called maternal grandfather, maternal grandfather is called maternal uncle and maternal uncle is called maternal aunt, then what will the father of the mother be called ?
 - (1) Maternal grandmother (2) Maternal uncle
 - (3) Maternal grandfather (4) Maternal aunt
- 6. In a unit test Sonakshi's marks in Mathematics are more than her marks in History but not more than her marks in Geography. Her marks in Science are more than her marks in History but not as much as in Mathematics and her marks in English are not as much as in Geography. In which subject did she score the lowest ?

(1) History (2) English (3) Science



7. Which number will replace the question mark in the given pattern ?



9. Which of the following diagrams satisfies the condition of placement of dot as in the given Figure (X) ?



Figure (X)



10. Which of the following cubes CANNOT be formed using the given figure ?





11. How many unit cubes were removed from the solid on the left to obtain the solid on the right ?



12. $\frac{2}{3}$ of the books in a box are English books, $\frac{1}{4}$ are Maths books and the rest are Science books. What fraction of the books are Science books ?

(4) 3

(1)
$$\frac{2}{3} - \frac{1}{4}$$
 (2) $\frac{2}{3} \times \frac{1}{4}$ (3) $1 - \left(\frac{2}{3} + \frac{1}{4}\right)$ (4) $1 - \left(\frac{2}{3} - \frac{1}{4}\right)$

13. If $3 \times 6 = 18$; $4 \times 7 = 22$; $9 \times 1 = 20$, then $5 \times 2 = ?$

 (1) 7
 (2) 10
 (3) 14

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Direction (Q. 14 to Q. 16) : In alpha-numeric series letters and numbers (or digits) together are placed in a specific pattern. We continue this pattern to find what has been asked in the question.

Tick the answer pattern which comes next.

Problem Set

14.	18Z, 17Y, 16X, 15W ?				
	(1) 14V	(2) 14U	(3) U14	(4) V15	
15.	5V, 66W, 77X, 88Y ?				
	(1) 99X	(2) 99Z	(3) 999Z	(4) 99U	
16.	6. AB98, CD87, EF76, GH65, ?				
	(1) IJ54	(2) JK54	(3) IJ53	(4) JK43	

Direction (Q. 17) : There are three forms, X, Y and Z of a sheet. Figures X and Y respectively show the two consective folds of the sheet. And the figure Z shows punch on the folded sheet. Choose one figure from the four options (1), (2), (3) and (4), that is similar to the unfolded form of the sheet ?



18. Choose the one which is different from the others.



19. What comes next ?



Direction (Q. 20) : Study the following arrangement carefully and answer the questions given below. W 1 R % 4 J E # M T 2 1 9 B H 3 A \$ 9 F Q 5 D G 6 U S P

20. Which of the following is the seventh to the right of the eighteenth from the right end ?

(1) A (2) E (3) \$

(4) #



PART-II

SECTION-A : PHYSICS

This section contains **15 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.



25. The given diagram shows four gears. Raj applied a force to make the smallest gear P, rotate in a clockwise direction as shown. In which direction will gears Q, R and S rotate?



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(1) P

26. Which of the following simple machines is/are INCORRECTLY paired with its function?



(1) X and Y	(2) Y and Z	(3) Z only	(4) Y only
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27. Four similar-sized magnets, P, Q, R and S, were hung from strings of different lengths as shown in the diagram. A tray of iron pins was placed below the magnets. Each magnet attracted a different number of pins as shown in the diagram

Which magnet was most likely the weakest?



28. Which of the following statements is true about using a hammer as a lever to pull a nail out of piece of wood ?



- (1) The load is much nearer to the fulcrum than the effort.
- (2) The lever changes the direction of the force.
- (3) We use larger force to pull out the nail compared to pulling it out directly without using the hammer.
- (4) The pulling action is changed to the vertical lifting action on the nail.
- **29.** A seesaw is the same class lever as the
 - (1) Handle of water pump. (2) Bar to lift load.
 - (3) Bottle opener (4) Nut cracker
- 30. What is the main reason that some places on the Earth are warmer than others ?
 - (1) The Sun is closer to some places than others.
 - (2) The Sun stays above the horizon 24 hours a day in some places.
 - (3) The rays of the Sun are more direct at some places and more slanted at others.
 - (4) Some places experience warm seasons because of underground heat.

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31. Select the correct comparison among the following.

Inner planets	Outer planets
(1) Saturn, Uranus, Jupiter and Neptune	Mercury, Venus, Earth and Mars
(2) Made of gases	Made of rocks
(3) Mercury, Venus, Earth and Mars	Jupiter, Saturn, Uranus and Neptune
(4) Have no solid surfaces	Have solid surfaces

32. _____is an imaginary line that runs from North Pole to the South Pole. It is tilted at an angle of 23.5 degrees.

- (1) Equator (2) Axis (3) Orbit (4) None of these
- 33. Which of the following statements is INCORRECT about the Sun ?
 - (1) The Sun is a huge mass of ve-y hot gases.
 - (2) The Sun is the only planet that we can see in the day.
 - (3) The distance of the Sun from Earth is about 150000000 km.
 - (4) The Sun is important to the Earth because it provides light energy to green plants to make food.
- 34. Which of the following statements are correct ?
 - (i) Milky Way is a spiral-shaped galaxy.
 - (ii) Planet Venus has 63 Moons.
 - (iii) Satellites are small heavenly bodies that revolve around the Sun.
 - (iv) One revolution of the Earth is completed in about $365\frac{1}{4}$ days. This time period is called a solar year.
 - (1) (i) and (iv) (2) (ii) and (iii) (3) (i) and (ii) (4) (iii) and (iv)



Which of the following figures shows the correct positions of the above mentioned celestial bodies in the solar system ?





SECTION-B : CHEMISTRY

This section contains **15 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

36.	Gneiss is usually formed from				
	(1) dolomite	(2) slate	(3) granite	(4) jade	
37.	Petroleum is also called as				
	(1) white gold	(2) black gold	(3) gold	(4) black silver	
38.	Tsunami means harbour wave. It is a word.				
	(1) Russian	(2) Chinese	(3) Japanese	(4) Canadian	
39.	Acute scarcity of food	is called			
	(1) famine	(2) tsunami	(3) earthquake	(4) lava	
40.	The sudden shaking in	the earth's crust is called	d		
	(1) lava	(2) tsunami	(3) earthquake	(4) famine	
41.	causes b	lack patches on skin.			
	(1) Mercury	(2) Arsenic	(3) Lead	(4) all of these	
42.	In 1992 the Earth Sum	mit was held in			
	(1) Delhi	(2) Mexico	(3) Rio de janeiro	(4) Doha	
43.	Which one of the follow	wing is an e waste?			
	(1) Polythene	(2) Old CD	(3) Vegetable peels	(4) Old clothes	
44.	If an earthquake occurs	s, which of the following	g you should NOT do?		
	(1) If you are indoors, stay in and get under a desk or a table.				
	(2) If you are outdoors, stay away from trees and buildings.				
	(3) If you are on a beach, get into the sea.(4) All of these				
45.	Petrol is refined from the crude oil obtained from oil wells. Besides petrol, crude oil can al give				
	(1) Kerosene	(2) Wax	(3) LPG	(4) All of these	
46.	Which of the following resources?	g factors is/are NOT resp	onsible for the depletion	of the world's natural	
	(i) An increase in the human population		(ii) Increasing number of vehicles in use		
	(iii) The greater use of	biodegradable products			
	(1) (ii) only	(2) (iii) only	(3) (i) & (ii)	(4) (ii) & (iii)	



SECTION-C : BIOLOGY

This section contains **15 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

51.

The seeds of gul mohur are dispersed by :



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55.	A lung breathing	aquatic animal is		
	(1) starfish	(2) whale	(3) both (1) & (2)	(4) seahorse
56.	Refer the given fig	gure and select the correct op	tion.	
	(1) X type of join	t shows no movement at all	Ĩ	× ×
	(2) X type of join	t is also present in our elbow	/	
	(3) X type of join	t is also found in between ve	ertebrae	
	(4) Both (1) & (2)			
57.	The longest bone	in our body is		
	(1) thigh bone	(2) fore arm bone	(3) sternum	(4) girdle bones
58.	Observe the chart	given below.		
	Fish	Frog	Ostrich	Whale
	Which of the follo	owing best represents 'P'?	o surren	() Hule
	(1) Pigeon	(2) HEN	(3) Shark	(4) Cobra
59.	The fruit with stic	ky glands is		
	(1) lotus	(2) babam	(3) plumbago	(4) xanthium
60.	Read the followin	g statements and choose the	correct option.	
	X · Athletes and other sportsmen have well developed muscles			
	Y : Regular exercise develops muscles and makes them strong and healthy			
	(1) X is wrong · Y is correct			
	(2) X is correct : Y is wrong			
	(3) Both X and Y are correct; Y explains X			
	(4) Both X and Y are correct : Y does not explain X			
61.	All the work of m	uscular coordination is done	by the	
	(1) Cerebrum	(2) cerebellum	(3) medulla	(4) spinal cord
62.	A temperature at	which oxygen unites with fu	el rapidly is	
	(1) normal temper	rature	(2) specific tempera	ture
	(3) kindling temp	erature	(4) none of these	

63.	Study the following tak	ole.			
	P : Part of the embryo	that grows into leaves	Q : Small opening for w	water in a seed	
	R : Part of the embryo	that grow into a root	S : Seed without skin		
Which of the following correctly represents P, Q, R, & S?					
	(1) P - radicle, Q - plumule, R - micropyle, S - cotyledon				
	(2) P - plumule, Q - micropyle, R - radicle ,S - cotyledon				
	(3) P - radicle, Q - micropyle, R - plumule, S - cotyledon				
	(4) P - embryo, Q - radicle, R - micropyle ,S - cotyledon				
64.	Floating ribs are the				
	(1) first two ribs		(2) last two pairs of ribs	8	
	(3) all the ribs		(4) none of them		
65.	A rigid strip used for supporting a broken bone is called a				
	(1) Stretcher	(2) sling	(3) splint	(4) none of these	

SECTION-D : MATHEMATICS

This section contains **15 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

66.	Find the maximum difference between three digit numbers formed with the digit 7,8 and 0			the digit 7,8 and 0	
	(1) 2 6 1	(2) 162	(3) 216	(4) 126	
67.	On dividing 78,780 by	78, we get :			
	(1) 101	(2) 1010	(3) 110	(4) 1100	
68.	$\frac{1}{4} \times \frac{5}{12} \times \frac{8}{15} =$				
	(1) $\frac{5}{18}$	(2) $\frac{1}{18}$	(3) $\frac{1}{48}$	(4) $\frac{1}{6}$	
69.	If radius of a circle is 8cm, then diameter is :				
	(1) 2 cm	(2) 8 cm	(3) 4 cm	(4) 16 cm	
70.	$\frac{8}{25}$ is equivalent to :				
	(1) 20 %	(2) 31%	(3) 32 %	(4) 3.2 %	
71.	In the adjoining figure, BCD and ACE are straight lines, which type of triangle is ABC				
	(1) Acute angled	(2) Obtuse angled		D	
	(3) Right angled	(4) None of these		260°	
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72.

Find the area of the shaded region in the fig, where ABCD is a rectangle

5 cm 10 cm (1) 25 cm² (2) 50 cm² (3) can't be determined (4) none of these 73. $18 \div 3 \times 6 + 7 - 2 =$ (1) 74 (2) 76 (3) 6 (4) 41 74. The volume of air in a room which is 10 m long, 6.5 m wide and 5 m height is (in m^3) : (1) 425 (2) 225 (3) 325 (4) None of these 75. The percentage of unshaded portion (1) 75%(2) 50% (3) 25 % (4) 100%76. The total number of factors of 48 is (1) 7(2) 8(3) 9(4) 1077. The average marks of sunny in 5 tests is 80. If total marks in any four tests is 378, then marks in fifth test is : (2) 23 (1) 24(4) None of these (3) can't be determined 78. The sum of supplement and complement of 80° is $(1) 110^{\circ}$ (2) 100° $(3) 90^{\circ}$ $(4) 80^{\circ}$ 79. Shruti has 45% pink dresses, 25% yellow dresses and rest are black dresses. If total dresses are 40, then find the number of black dresses (1) 18(2) 12(3) 10 (4) 3080. Sumit travelled 180 km from place A to place B. In the given pie chart, find the percentage of the journey he travelled by Rickshaw. Taxi 20km (2) $28\frac{1}{8}\%$ (1) $1\frac{1}{4}\%$ Bus Metro 45km (3) 15% (4) None of these

(Pie chart for distance travelled)

Ricksha



SPACE FOR ROUGH WORK