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ISMART
iQuest Scholastic & Mental Aptitude Reward Test

FOR CLASS 10TH (EQUIP)
SAMPLE TEST

Time: 1 Hr	Max Marks : 200

The Test Consists of Four Sections : (TOTAL 50 QUESTIONS)

Section	No. of Questions
Section A : Calculation	10 Q.
Section B : Reasoning	10 Q.
Section C : Comprehension	5 Q.
Section D : Scholastic Aptitude	25 Q.

Section D : Syllabus

Physics – Motion, Force, Momentum, Gravitation
Chemistry – Matter in our surroundings, Is matter Around us Pure
Biology – Cell, Tissues
Maths – Exponents, Number System, Linear Equations, Lines and Angles, Areas of 2 D figures

INSTRUCTIONS TO CANDIDATE

- Each subject in this paper consists of multiple choice questions with only one correct answer. ***+4 marks*** will be awarded for correct answer and ***–1 mark*** for wrong answer.
- Please read the instructions given for each question carefully and fill the correct answer against the question numbers on the answer sheet in the respective subject.
- Use blue or black ball point pen to darken the appropriate circle & mark should completely fill the circle.
- The Question paper contains blank spaces for your rough work. No additional sheet will be provided for rough work.
- Blank papers, Clipboards, Log Tables, Slide rule, Calculators, Cellular phones, Pagers and Electronic gadgets in any form are not allowed.
- Write your Name, Student ID in the block at the top of the Answer Sheet. Also write your Name & Student ID in the space provided on this cover page of question paper.
- **This test paper is just an indicative of the actual test. Total number and type of questions in actual test may vary.**

Name:_____Student ID_____

Dear student, this sample test is an indicative of the actual test, in which you would be tested on various skills required to crack any competitive exam in the future.

After the actual test, you would be given a report indicating your strengths and weaknesses in each of the sections. This would be very useful to analyze your performance.

SECTION - A
CALCULATION

1. 63% of 735 – ?% of 398 = 295.89

(A) 42 (B) 44
(C) 46 (D) 48

2. $1152 \div 36 + (9)^3 = ?$

(A) 749 (B) 7231
(C) 738 (D) 761

3. $69.2 \times 18.4 \times 4.5 = ?$

(A) 5729.76 (B) 5972.76
(C) 5279.76 (D) 5792.76

4. $[(11)^3 \times (6)^2] \div (4)^3 = ?$

(A) 2994.75 (B) 748.6875
(C) 272.25 (D) 4492.125

5. $748 \times 362 = (520)^2 + (?)$

(A) 382 (B) 374
(C) 365 (D) 376

6. $3525 \div 25 - 8640 \div 144 = ?$

(A) 81 (B) 91
(C) 102 (D) 60

7. $676.66 \times 0.76 + 06.66 - 76.76 = ?$

(A) 444.1616 (B) 444.1515
(C) 444.1414 (D) 444.1313

8. 38% of 818 – ?% of 636 = 158.2

(A) 12 (B) 24
(C) 36 (D) 48

9. $13.8 \times 16.7 \times 21.4 - 2931.844 = ?$

(A) 1800 (B) 1900
(C) 2000 (D) 2100

10. $13498 + 8932 - 1159 = ? \times 89$

(A) 231 (B) 233
(C) 237 (D) 239

SECTION - B
REASONING

11. Paul takes the underground train to work and uses an escalator at the railway station. If Paul runs up 7 steps of the escalator, then it takes him 43.5 seconds to reach the top of the escalator. If he runs up 14 steps of the escalator, then it takes him only 33.0 seconds to reach the top.

How many seconds would it take Paul to reach the top if he did not run up any steps of the escalator at all?

(A) 54 (B) 56
(C) 57 (D)60

12. If you Arrange these scrambled letters to make simple English words – linges, nnuo, mader, troac, elitlt, centis, pick the FIRST letters from the above words, then which word will be formed after unscrambling those first letters?

(A) ground (B) island
(C) louder (D) stound

13. Grandpa: "My grandson is about as many days as my son is weeks, and my grandson is as many months as I am in years. My grandson, my son and I together are 100 years. Can you tell me my age in years?"

(A) 50 (B) 60
(C)65 (D)70

14. *Find the logically consistent pair of sentences on the basis of the given information*

If Anita and Sheila are not dancing, Anjali cannot dance.

A. Anita and Sheila are dancing.
B. Anjali cannot dance.
C. Anita and Sheila are not dancing.
D. Anjali is dancing.

(A) DA (B) BA
(C) DB (D) BD

15. **Fact 1:** Pictures can tell a story.

Fact 2: All storybooks have pictures.

Fact 3: Some storybooks have words.

If the first three statements are facts, which of the following statements must also be a fact?

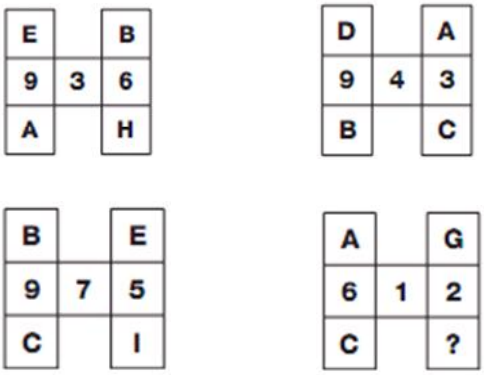
I: Pictures can tell a story better than words can.

II: The stories in storybooks are very simple.

III: Some storybooks have both words and pictures.

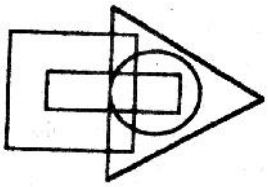
(A) I only (B) II only
(C) III only
(D) None of the statements is known fact

16. Which letter replaces the question mark?



(A) E (B) F
(C) I (D) P

Directions : (Q17-18)The triangle stands for sportsmen. The circle stands for cricketers. The rectangle stands for boys. The square stands for non-urban. Study the diagram carefully and answer each question.



17. In the above diagram which one of the following statements is true?

(A) All non urban persons are sportsmen

(B) There are boys who are sportsmen and do not play cricket

(C) All urban boys are not sportsmen

(D) All urban boys play cricket

18. In the above diagram which one of the following statements is true?

(A) There are some non urban non boys who are sportsmen but not cricketers.

(B) There are some urban boys who are not cricketers but who are sportsmen.

(C) There are non - cricketer sportsmen among the non urban boys.

(D) There are some urban boys who are not cricketers

Directions : (Q. 19-20) : Each of the problem below consists of a question and three statements, I, II and III given below it. Read all the statements carefully and seek all possible combinations which could be sufficient for answering the question. A single statement or statements with least combinations which could be sufficient for answering the question would be your answer.

19. In which year was Tarun born?

I. Tarun is six years older than Rabin.

II. Rabin's brother was born in 1982.

III. Tarun's brother is two years younger than Rabin's borther who was eight years younger than him.

(A) I and III only (B) II and III only
(C) All I, II and III (D) I and II only

20. Who among P, Q, R, S and T is in the middle while standing in a line?

I. Q is to the right of T.

II. S is between P and T.

III. Q is between T and R.

(A) I and II only (B) II and III only
(C) I and III only (D) All I, II, III

SECTION - C
COMPREHENSION

Read the given passage carefully.

Galaxies are not evenly distributed throughout the universe. A few are found alone, but almost all are grouped in formations termed galactic clusters. These formations should not be confused with stellar clusters, globular clusters of stars that exist within a galaxy. The size of galactic clusters varies enormously, with some clusters containing only a dozen or some members and others containing as many as 10,000. Moreover, galactic clusters themselves are part of larger clusters of clusters, termed superclusters. It is surmised that even clusters of superclusters are possible.

Our galaxy, the Milky Way, is part of a galactic cluster called the Local Groups, which has twenty members and is typical in terms of the types of galaxies it contains. There are three large spiral galaxies : Andromeda, the largest galaxy in the group; the Milky Way, the second largest galaxy; and the Triangulum Spiral, the third largest. There are also four medium-sized spiral galaxies, including the Large Cloud of Magellan and the Small Cloud of Magellan. There are four regular elliptical galaxies, the remainder are dwarf ellipticals. Other than our own galaxy, only Andromeda and the Clouds of Magellan can be seen with the naked eye, and the Clouds are visible only from the Southern Hemisphere.

In the vicinity of the Local Group are several clusters, each containing around twelve members. The nearest cluster rich in members is the Virgo Cluster, which contains thousands of galaxies of all types. Like most large clusters, it emits X-rays. The Local Group, the small neighbouring clusters, and the Virgo Cluster form part of a much larger cluster of clusters the Local Supercluster.

The existence of galactic clusters presented a riddle to scientists for many years–the "missing mass" problem. Clusters are presumably held together by the gravity generated by their members. However, measurements showed that galaxies did not have enough mass to explain their apparent stability. Why didn't these clusters disintegrate ? It is now thought that galaxies contain great amounts of "dark matter," which cannot be directly observed but that generates gravitational pull. This matter includes gas, dust, burnt-out stars, and even black holes.

21. Which of the following does the passage mainly discuss ?

(A) Clusters and supercluster of galaxies

(B) An astronomical problem that has never been solved

(C) A recent development in astronomy

(D) The inredible distance between galaxies

22. What conclusions can be made about galaxies that are not found in clusters ?

(A) They have never been observed

(B) They are larger than other galaxies

(C) They are not actually galacies but parts of galaxies

(D) They are outnumbered by galaxies that do occur in cluster

23. The word 'vicinity' in line 15 means :

(A) locality (B) surrounding area

(C) neighbourhood (D) beginning

Read the passage carefully.

Ralph Earl was born into a Connecticut farm family in 1751. He chose early to become a painter and looked for what training was available in his home state and in Boston. Earl was one of the first American artists to paint landscapes. Among his first paintings were scenes from the Revolutionary War battles of Lexington and Concord. In 1778, Earl went to London to study with Benjamin West for four years.

When Earl returned to the United States, he was jailed for fourteen months for outstanding debts. While still a prisoner, he painted portraits of some of New York City's most elegant society women and their husbands. After his release, he took up the trade of itinerant portrait painter, working his way through southern New England and New York. Earl didn't flatter his subjects

but his portraits show a deep understanding of them, perhaps because he had sprung from the same roots.

Among Earl's most famous paintings is his portrait of Justice Oliver Ellsworth and his wife, Abigail. To provide counterpoint to the severity of the couple, he accurately details the relative luxury of the Ellsworth's interior furnishings. The view through the window behind them shows sunlit field, well-kept fences, and a bend of the Connecticut River. One of Earl's paintings is something of an anomaly, Reclining Hunter, which for many years was attributed to Thomas Gainsborough, show a well-dressed gentlemen resting beneath a tree. In the foreground, he displayed a pile of birds, the result of a day's hunt. The viewer can also see a farmer's donkey lying in the background, another of the hunter's victims. This outragenously funny portait couldn't have been commissioned - no one would have wanted to be portrayed in such an absurd way. However, this painting uncharacteristically shows Earl's wit as will as his uncommon technical skills.

24. Which of the following is NOT given in the passage as a subject of one of Earl's Paintings ?

(A) People (B) Landscapes

(C) Battle Scenes (D) Fruits and flowers

25. According to the passage, Benjamin West was Ralph Earl's ?

(A) subject (B) teacher

(C) student (D) rival

SECTION - D

SCHOLASTIC APTITUDE

26. If a body is moving at constant speed in a circular path, its–

(A) velocity is constant and its acceleration is zero

(B) velocity and acceleration are both changing direction only

(C) velocity and acceleration are both increasing

(D) velocity is constant and acceleration is changing direction

27. If a velocity of 3 meters per second is added to another of 5 meters per second, the sum is –

(A) 2 meters per second

(B) 4 meters per second

(C) anything over 3 meters per second

(D) between 2 meters per second and 8 meters per second

28. You are on an ocean liner that is going eastward at 12.0 meters per second, and you run southward at 3.6 meters per second. The magnitude and direction of your resulting velocity.

(A) 15.6 m/s, E/W (B) 18.4 m/s, W/E

(C) 12.5 m/s, S/E (D) 13.5 m/s, S/E

29. A frictionless wagon is pushed, from rest, with a force of 60 newtons for 14 seconds. If it then strikes a wall and comes to rest in 0.15 second, how much average force does the wall exert on it ?

(A) 6000 N (B) 5600 N

(C) 4500 N (D) 4000 N

30. A 35 kg girl on roller skates, standing still, throws a 6 kg medicine ball forward at 3.5 meters per second. How much is her recoil velocity (the backward speed she acquires as a result of the throw)–

(A) – 0.6 m/s (B) – 1.6 m/s

(C) – 2.6 m/s (D) – 5.6 m/s

31. Which of the following is the evidence to show that there must be a force acting on earth and directed towards the sun–

(A) Deviation of the falling bodies towards east

(B) Revolution of the earth round the sun

(C) Phenomenon of day and night

(D) Apparent motion of sun round the earth

32. Which one of the following sets of phenomena would increase on raising the temperature?

(A) Diffusion, evaporation, compression of gases

(B) Evaporation, compression of gases, solubility

(C) Evaporation, diffusion, expansion of gases

(D) Evaporation, solubility, diffusion, compression of gases

33. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions

(A) Low temperature, low pressure

(B) High temperature, low pressure

(C) Low temperature, high pressure

(D) High temperature, high pressure

34. The property to flow is unique to fluids. Which one of the following statements is correct?

(A) Only gases behave like fluids

(B) Gases and solids behave like fluids

(C) Gases and liquids behave like fluids

(D) Only liquids are fluids

35. Which of the following statements are true for pure substances?

(i) Pure substances contain only one kind of particles

(ii) Pure substances may be compounds or mixtures

(iii) Pure substances have the same composition throughout

(iv) Pure substances can be exemplified by all elements other than nickel

(A) (i) and (ii) (B) (i) and (iii)

(C) (iii) and (iv) (D) (ii) and (iii)

36. Rusting of an article made up of iron is called

(A) corrosion and it is a physical as well as chemical change

(B) dissolution and it is a physical change

(C) corrosion and it is a chemical change

(D) dissolution and it is a chemical change

37. A mixture of sulphur and carbon disulphide is

(A) heterogeneous and shows Tyndall effect

(B) homogeneous and shows Tyndall effect

(C) heterogeneous and does not show Tyndall effect

(D) homogeneous and does not show Tyndall effect

38. Which of the following can be made into crystal?

(A) A Bacterium (B) An Amoeba

(C) A Virus (D) A Sperm

39. A cell will swell up if

(A) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium

(B) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell

(C) The concentration of water molecules is same in the cell and in the surrounding medium

(D) Concentration of water molecules does not matter

40. Chromosomes are made up of

(A) DNA (B) protein

(C) DNA and protein (D) RNA

41. Which of the following tissues has dead cells?

(A) Parenchyma (B) Sclerenchyma

(C) Collenchyma (D) Epithelial tissue

42. Find out incorrect sentence

(A) Parenchymatous tissues have intercellular spaces

(B) Collenchymatous tissues are irregularly thickened at corners

(C) Apical and intercalary meristems are permanent tissues

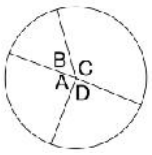
(D) Meristematic tissues, in its early stage, lack vacuoles

43. Girth of stem increases due to

(A) apical meristem (B) lateral meristem

(C) intercalary meristem (D) vertical meristem

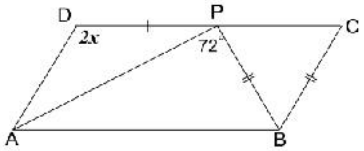
44. A circle is divided into four regions by radii. Angle A is $\frac{2}{3}$ the angle C while angle D is twice angle B. Angles B and C are supplementary. Angle C is



(A) 100° (B) 110°

(C) 120° (D) 135°

45. ABCD is a parallelogram. BP = DP = BC. The size of *x* is



(A) 52° (B) 54°

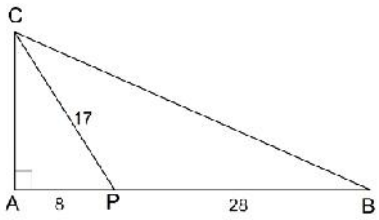
(C) 56° (D) 58°

46. How many zeros are there in the result of $5675^2 - 4325^2$?

(A) 2 (B) 3

(C) 4 (D) 5

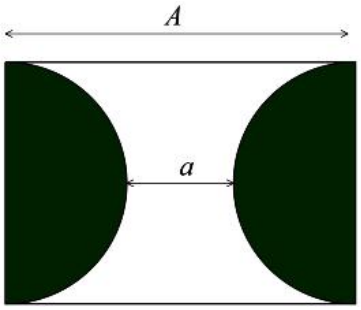
47. P is a point on side AB of the right-angled triangle ABC. The distances of P from the vertices of the triangle are as shown. The length of BC is



(A) 42 (B) 41

(C) 40 (D) 39

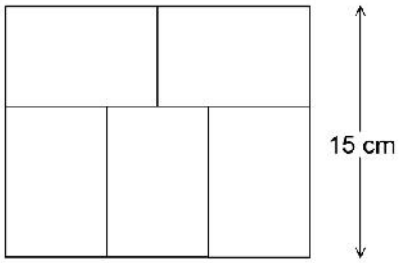
48. Two semicircles are placed in a rectangle of length *A*. The shortest distance between the semicircles is *a*. The total area of the semicircles (shaded) is



(A) $\pi\left(\frac{A+a}{2}\right)^2$ (B) $\pi\left(A-\frac{a}{2}\right)^2$

(C) $\pi\left(A-a\right)^2$ (D) $\pi\left(\frac{A-a}{2}\right)^2$

49. Five identical rectangles are placed to form a new rectangle. The width of the new rectangle is 15 cm. The area of the big rectangle (in cm^2) is



(A) 270 (B) 300

(C) 330 (D) 360

50. The three digit number 7*d*2 is divisible by 3 and by 11. The digit *d* must be

(A) 1 (B) 2

(C) 6 (D) 9

ANSWER KEY

SECTION - A CALCULATION

1.	(A)	**2.**	(D)	**3.**	(A)	**4.**	(B)	**5.**	(D)	**6.**	(A)	**7.**	(A)
8.	(B)	**9.**	(C)	**10.**	(D)								

SECTION - B REASONING

11.	(A)	**12.**	(B)	**13.**	(B)	**14.**	(A)	**15.**	(C)	**16.**	(B)	**17.**	(D)
18.	(A)	**19.**	(C)	**20.**	(B)								

SECTION - C COMPREHENSION

21.	(A)	**22.**	(B)	**23.**	(B)	**24.**	(D)	**25.**	(B)

SECTION - D SCHOLASTIC APTITUDE

26.	(B)	**27.**	(D)	**28.**	(C)	**29.**	(B)	**30.**	(A)	**31.**	(B)	**32.**	(C)
33.	(C)	**34.**	(C)	**35.**	(B)	**36.**	(C)	**37.**	(D)	**38.**	(C)	**39.**	(B)
40.	(C)	**41.**	(B)	**42.**	(C)	**43.**	(B)	**44.**	(D)	**45.**	(B)	**46.**	(D)
47.	(D)	**48.**	(D)	**49.**	(A)	**50.**	(D)						