Vipasyaa IIT Foundation
8th Class
Exam: OBJECTIVE TEST - 2
No. of Questions: 45
Duration: 90 Min.

MATHEMATICS

MCQ's with single correct answers.

1. *If* $\frac{52}{x}=\sqrt{\frac{169}{289}}$, then the value of x is

   A)52 B)58 C)62 D)68

2. If $\sqrt{1+\frac{x}{169}}=\frac{14}{13}$,then x = 0

   A)1 B)1 C)27 D)17

3. The value of $5^2 + 6^2 + 30^2$ is...

   A) 25^2 B) 30^2 C) 31^2 D) 38^2

4. 370, 5000, 1000 are all....

   A) perfect squares B) non-perfect squares C) square root D) none

5. What will be the possible unit digits for the square number?

   A)2 B)9 C)7 D)8

6. The square of a natural number n is equal to the sum of first n ..... numbers

   A) even natural B) odd natural C) natural D) none

7. Match the following.

   a. $1^2+2^2+3^2$=... [ ] 1) 39

   b. $2^2+3^2+6^2$=... [ ] 2) 13^2

   c. $3^2+4^2+12^2$ = ... [ ] 3) 7^2

   d. $4^2+5^2+20^2$ = ... [ ] 4) 14

   5) 21^2

   A) a-4, b-1, c-2, d-5 B) a-4, b-3, c-2, d-5

   C) a-3, b-1, c-5, d-2 D)a-3, b-, c-4, d-5

8. Which of the following are consecutive square numbers?

   A) p^2, $(p+2)^2$ B) $(p+1)^2$, $(p+3)^2$ C) p^2, $(p+1)^2$ D) $(p+1)^2$, $(p+3)^2$

9. Which of the following number is a perfect square?

   A)136 B))121 C)23 D)240

10. $\sqrt{\frac{25}{81}-\frac{1}{9}}=$

    A) $\frac{2}{3}$ B) $\frac{4}{9}$ C) $\frac{16}{81}$ D) $\frac{25}{81}$

11. If $\sqrt{18\times14\times a}=84$,then a =

A)22 B)324 C)2916 D)4800

12. 1331, 1234321, 121, 1441 are the example for
A) square root B) cube root C) palindrome D) perfect numbers

13. How many two -digit numbers satisfy this property: The last digit (unit ‘s digit) of the square of the two – digit number is 8
A)1 B)0 C)3 D)5

14. Which of the following number is not a perfect square?
A)625 B)1024 C)1369 D)2161

15. Which of the following have 6 in units place
A)144^2 B)251^2 C)118^2 D)299^2

PHYSICS

MCQ with single correct answers:

16. A train starting initially with a speed of 36 km/h picks up a velocity of 108 km/h in half minute. Calculate its acceleration in m/s 2.
A) 0.66 m/s^2 B) 0.76 m/s^2 C) 0.86 m/s^2 D) 0.96 m/s^2

17. Choose the correct in the following
A) Arms in a clock moves with uniform speed
b) an apple falling from a branch of tree fall with acceleration
c) when a stone thrown up, it moves with retardation
A) only a, b correct B) only a, c correct
C) only b, c correct D) all a, b, c correct

18. The distance between Delhi and Agra is 200 km A train travels the first 100 km at a speed of 50 km/h How must fast must the train travel the next 100 km, so as to get average 70 km/h for the whole journey?
A) 115.6 km/h B) 116.6 km/h C) 106.6 km/h D) 16.6 km/h

19. When a body moves form one place to another place, choose the correct
a) its distance can be equal to or greater than displacement
b) its average speed can be equal to or greater than average velocity
A) only a B) only b C) both a, b D) both are wrong

20. A mom pushes a stroller up and down the mall with an average speed of .6m/s. How far will she go in 30 min?
A) 1080m B) 2160m C) 612 m D) 123 m

21. Apara and Pranathi start from home at the same time and travel by different routes to school. Aparna’s house is at a distance of 150m from the school while Pranathi’s house is at 200 m from the school. Both reach the school at the same time.
Who travelled faster?
A) Pranathi B) aparna C) both equal D) none

22. Arrange the following speeds in increasing or decreasing.
a) An athlete running with a speed of 10m/s
b) A bicycle moving with a speed of 20 m/min
c) A scooter moving with a speed of 30 km/h

A) a > b >c B) a > b = c C) a =b > c D) a = b= c

23. A bullet is shot from a gun with a velocity of 120 m/s. How long will it take bullet to strike the target that is 200 meters away?

A) 2 sec B) 6.7 sec C) 5 sec D) A:1.67sec

24. 1km/h = ... m/s

A) 5/18 B) 18/5 C) 9/5 D) 5/9

25. A speed is

A) always +ve B) always -ve

C) may be +ve and well as -ve D) neither +ve nor -ve

26. A scooterist covers a distance of 3 kilometers in 5 minutes. This speed equal to

a) 1000 cm/s b) 10 m/s c) 36 km/h

A) a, b only correct B) a, c only correct

C) b, c only correct D) all a, b, c correct

27. A man moves with a speed of 15 m/s. Express his speed in km/hr.

A) 34 km/h B) 54 km/h C) 36 km/h D) 18 km/h

28. Imagine two boys Ramu and Somu running a 300 m race. Let as imagine that Ramu finishes the race in 15 sec and somu finishes 30sec. Who run faster?

A) Ramu B) somu C) equal speed D) none

29. A car covered a distance of 30km in 2.5 hours. What is the speed of the car?

A) 12 kmph b) 30 km/h C) 2.5 km/h D) 25 km/h

30. If the mom in problem 6 stops to sit on a bench located 20m to the east of her starting place, what was her average velocity during her 30min walk?

A) 0.90 m/s B) 0.80 m/s C) 0.70 m/s D) 0.011m/s

CHEMISTRY

MCQ with single correct answers:

31. The size of the nucleus when it is compared to the total volume of atom is

A) small B) large C) very small D) very large

32. Existence of positively charged nucleus was established by

A) Positive ray analysis B) alpha ray scattering experiment

C) X - ray analysis D) discharge tube experiment

33. A compound atom means

A) physical combination of same atoms

B) chemical combination of different atoms

C) chemical combination of same or different atoms

D) physical combination pf different atoms

34. According to Aristotle

A) matters contains atoms B) matter is same in all materials

C) atoms are visible D) matter is a continuous network of small particles

35. The weight of nucleus is due to

A) electrons B) neutrons, electrons

C) protons, neutrons D) electrons, protons

36. Nucleons are
A) Protons only B) neutrons only
C) Protons and neutrons D) Protons and electrons

37. The defects of Rutherford's atomic model are
A) Does not explain the stability of an atom
B) Does not explain the distribution of electron around the nucleus
C) It could not explain the line spectrum D) None

38. Rutherford's experiment on scattering of particles showed for the first time that the atom has
A) electrons B) Protons C) nucleus D) neutrons

39. Rutherford's scattering experiment is related to the size of the
A) electrons B) Atoms C) nucleus D) neutrons

40. alpha particles
A) have a mass of 4amu B) are emitted from radioactive substances
C) are divalent positive helium ions D) are high energy radiation

41. Match the following

a) Carbon-12	1) 6 neutrons
b) Magnesium	2) 8 neutrons
c) neon	3) 10 neutrons
d) Oxygen	4) 12 neutrons

42. The smallest functional unit of matter is

A) compound B) Atom C) mixtures D) none

43. A greatest Indian Philosopher suggested that matter is made up of minute particles is called "Kana"

A) Democritus B) Maharishi kanad C) Dalton D) None

44. An element without neutron is

A) helium B) hydrogen C) oxygen D) nitrogen

45. According to Dalton

A) Atom can be further divided B) Atom is the smallest particle

C) Atoms are able to form molecules D) Atom is called as kana