



Sainath Education Trust's  
**Rajiv Gandhi College**  
of Arts, Commerce, & Science. Vashi Navi Mumbai.  
{Permanently Affiliated to University Of Mumbai}  
**ACCREDITED BY NAAC, GRADE 'B'**

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**Sample Multiple Choice Questions**

**Class: F.Y.B.Sc.**

**Subject: PHYSICS PAPER – I**

**Semester: II**

1. The physical quantities which are completely specified by their magnitude alone but no direction is called \_\_\_\_\_

- a. Scalars quantities
- b. Vector quantities
- c. Polar vector
- d. Negative vector

Ans. a

2. The physical quantities which are completely specified by their magnitude & direction is called \_\_\_\_\_

- a. Scalars quantities
- b. Vector quantities
- c. Polar vector
- d. Negative vector

Ans. b

3. Example of scalar quantities \_\_\_\_\_

- a. force
- b. momentum
- c. velocity
- d. mass

Ans. d

4. Example of vector quantities \_\_\_\_\_

- a. time
- b. displacement
- c. density
- d. speed

Ans. b

5. Vectors associated with linear directional effect are called \_\_\_\_\_

- a. Axial vector
- b. polar vector
- c. equal vector
- d. negative vector

6. What will be the cross product of the vectors  $2i + 3j + k$  and  $3i + 2j + k$ ?

- a)  $i + 2j + k$
- b)  $2i + 3j + k$
- c)  $i + j - 5k$
- d)  $2i - j - 5k$

Ans. C

7. What will be the cross product of the vectors  $2i + 3j + k$  and  $6i + 9j + 3k$ ?

- a)  $i + 2j + k$
- b)  $i - j - 5k$
- c) 0
- d)  $2i - j - 5k$

Ans. C

8. Which of the following operation will give a vector that is perpendicular to both vectors a and b?

- a)  $a \times b$
- b)  $a \cdot b$
- c)  $b \times a$
- d) both  $a \times b$  and  $b \times a$

Ans. d

9. The curl of vector field  $f(x,y,z) = x^2i + 2zj - yk$  is \_\_\_\_\_

- a.  $-3i$
- b.  $-3j$
- c.  $-3k$
- d. 0

Ans. a

10. Given the scalar field defined by  $\phi(x,y,z) = 3x^2z - zy^3 + 5$ , value of  $\phi$  at the point (1,-2,-2)

\_\_\_\_\_

a. 5

b. 6

c. 7

d. 8

Ans. c

11. The order of the highest derivative in the equation, is called \_\_\_\_\_

a. order of a differential equation

b. degree of a differential equation

c. ordinary differential equation

d. partial differential equation

Ans. b

12.  $g(y) dy = f(x)dx$  is called \_\_\_\_\_

a. separable differential equation.

b. Exact differential equation

c. 1<sup>st</sup> order differential equation

d. perfect differential equation

Ans. a

**13. If the general solutions of a differential equation is  $(y + c)^2 = cx$ , where c is an arbitrary constant, then the order and degree of differential equation is**

(a) 1, 2

(b) 2, 1

(c) 1, 3

(d) None of these

Ans. a

14. SI unit of inductance \_\_\_\_\_

a. Maxwell

b. ohm

c. hennery

d. ampere

Ans. c

15. SI unit of capacitance \_\_\_\_\_

a. ohm

b. faraday

c. volt

d. ampere

Ans. b

16. If the current changes from 5A to 3A in 2 seconds and the inductance is 10H, calculate the emf.

a) 5V

b) 10V

c) 15V

d) 20V

Ans. b

17. In a periodic process, the time required to complete one cycle is called?

A. Period

B. Frequency

C. Amplitude

D. Wavelength

Ans. A

18.  $F = -Kx$ , Where K is called \_\_\_\_\_.

a. force constant

b. constant

c. restoring constant

d. harmonic constant

Ans. a

19. When the two superposed SHMs are in phase then  $A =$  \_\_\_\_\_

(a)  $A_1 - A_2$

(b)  $A_1 + A_2$

(c)  $A_1/A_2$

(d)  $2A$

Ans. b

20. When two superposed SHM's in opposite phase, Then  $A =$  \_\_\_\_\_

(a)  $A_1 - A_2$

(b)  $A_1 + A_2$

(c)  $A_1/A_2$

(d)  $2A$

Ans. a

21. Which of the following statements is wrong

(a) Sound travels in a straight line

(b) Sound travels as waves

(c) Sound is a form of energy

(d) Sound travels faster in vacuum than in air

Ans. d

22. 9. When a compression is incident on rigid wall it is reflected as

(a) Compression with a phase change of  $\pi$

(b) Compression with no phase change

(c) Rarefaction with a phase change of  $\pi$

(d) Rarefaction with no phase change

Answer: (a)

23. The wavelength of sound in air is 10 cm. its frequency is, (Given velocity of sound = 330 m/s)

- (a) 330 cycles per second
- (b) 3.3 kilo cycles per second
- (c) 30 mega-cycles per second
- (d)  $3 \times 10^5$  cycles per second

Answer: (b)

24. Sound waves having the following frequencies are audible to human beings

- (a) 5 c/s
- (b) 27000 c/s
- (c) 5000 c/s
- (d) 50,000 c/s

Answer: (c)

25. In the longitudinal waves the direction of vibration in medium of particle is

- (a) Perpendicular to propagation of wave
- (b) Parallel to propagation
- (c) Different from each other
- (d) Variable for time to time.

Answer: (b)