"Dissemination of Education for Knowledge, Science and Culture"

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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous)

Department of Physics

ICT based CIE

on

B.Sc. I: Internal Examination of Electricity, Magnetism and Electromagnetic Theory

Conducted by

Dr. S. I. Inamdar

on

Date:10/07/2021, Time: 12:00 to 01:00 pm

(2020 – 21)

Vivekanand College, Kolhapur. (Autonomous) Dept. of Physics Internal evaluation examination Feb 2020-21

B.Sc. I SEM II
Subject: Physics paper II
Title:ELECTRICITY ,MAGNETISM AND ELECTROMAGNETIC THEORY
Date:10/07/2021
Time: 12:00 to 01:00 pm
Marks: 20
Instructions: 1. All questions are compulsory
2. Each question carry 1 mark
3. Submit Google form in scheduled time .

* Indicates required question

1. Email *

2. Name *

3. Roll No.

4. PRN No. *

5. Seat No. *

_____

6. The unit of self inductance is _____ *

Mark only one oval.

- a) Tesla
- b) Henry
- c) Weber
- d) Sabine

7. Lenz's law describes _____ of induced e.m.f. *

Mark only one oval.

- a) amount
- b)polarity
- c) direction
- d) both b & c

8. Inductor is a device where energy is stored in _____ *

Mark only one oval.

- a) electric field
- b) magnetic field
- c) gravitational field
- d) potential field

9. Faraday's two laws together with Lenz' law known as laws of ____ *

Mark only one oval.

- a) magnetism
- b) electricity
- c) mechanics
- d) electromagnetic induction

10. Magnetic flux linked with a coil directly proportional to

Mark only one oval.

- a) current
- b) resistance
- c) voltage
- d) electric field

11. In mutual induction circuit there are _____ coils. *

Mark only one oval.

- a) three
- b) six
- c) two
- d) four

12. The time period of oscillation of a ballistic galvanometer is…… *

Mark only one oval.

- a) Small
- b) Large
- c) Zero
- d) Extremely large

13. The damping in ballistic galvanometer is due to ……. *

Mark only one oval.

- a) air damping
- b) electromagnetic damping
- c) Torque
- d) both (a) and (b)

14. the time required for the response reaches to ……% of its final values. *

Mark only one oval.

- a) 67.4%
- b) 36.8%
- c) 63.2%
- d) 76%

15. If Θ1 and Θ3 are the successive throws on the same side after charge is passed through a ballistic galvanometer … *

Mark only one oval.

- 1+ λ/2 = (⟦Θ1/Θ3)⟧ ^(¼)
- 1- λ/2 = (⟦Θ1/Θ3)⟧ ^(¼)
- 1+ λ/2 = (⟦Θ3/Θ1)⟧ ^(¼)
- 1- λ/2 = (⟦Θ3/Θ1)⟧ ^(¼)

16. Total number of electric field lines passing given area in unit time is known as…… *

Mark only one oval.

- a) electric flux
- b)electric field
- c)electric charge
- d)electric potential

17. The total electric flux through a closed surface is equal to ratio of total charge enclosed by the surface to the permittivity in which surface is placed. This is …… law. *

Mark only one oval.

- a) Coulomb's
- b)Gauss's
- c)Biot-Savart
- d)Amperes

18. The amount of work done in bringing unit positive charge from infinity to given point against the direction of electric field is known as …… at that point. *

Mark only one oval.

- a) electric flux
- b)electric field
- c)electric charge
- d)electric potential

19. Charge on capacitor is directly proportional to the …….. *

Mark only one oval.

- a) current
- b)electric field
- c)resistance
- d)electric potential

20. SI unit of admittance is *

Mark only one oval.

- ohm
- volt
- mho
- ampere

21. Susceptance is the reciprocal of *

Mark only one oval.

- Admitance
- Impedance
- reactance
- Non of above

22. the scalar product of a vector with itself is equal to --- *

Mark only one oval.

- its magnitude
- square of its magnitude
- Zero
- infinity

23. is the vector product of two non zero vectors is zero, then the vectors must be *

Mark only one oval.

- either parallel or antiparallel
- perpendicular
- inclined at an angle 45° with each other
- always antiparallel

24. *

$If\ magnitude\ of\ \overline{A}X\ \overline{B}\ =\ AB,\ then\ the\ two\ vectors\ must\ be$

Mark only one oval.

- parellel to each other
- antiparellel to each other
- perpendicular to each other
- co-planer

25. *

$The\ relation\ between\ linear\ velocity\ \overline{v}\ ,\ the\ radius\ vector\ \overline{r}\ anf\ angular\ velocity\ \overline{\omega}\ \ of\ a\ particle\ is$ ----

Mark only one oval.

$\overline{v}\ =\ \overline{r}\ X\ \overline{\omega}$

Option 1

$\overline{v}=\ \overline{\omega}\ X\ \overline{r}$

Option 2

$\overline{\omega}=\ \overline{v}\ X\ \overline{r}$

Option 3

$\overline{\omega}=\ \overline{r}\ X\ \overline{v}$

Option 4