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NPTEL

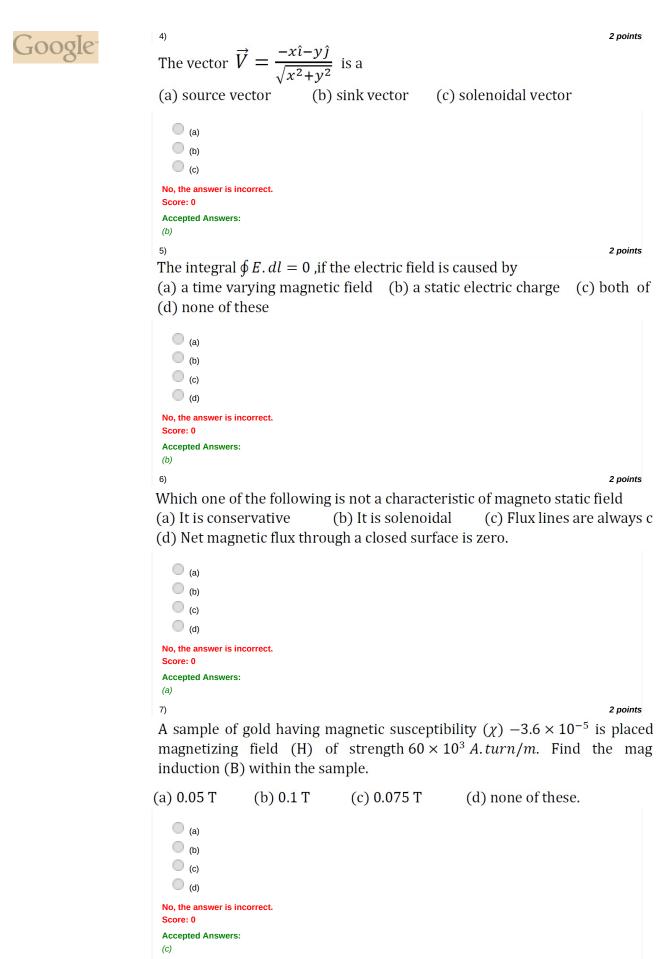**Courses** » **Introduction to Non-linear Optics and its Applications**

Announcements   **Course**   Ask a Question   Progress   Mentor   FAQ

Unit 2 - Pre-requisite Assignment

Course outline

How to access the portal

Pre-requisite Assignment

  ○ Quiz : Assignment 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Download Videos

Assignment Solution

Assignment 0

The due date for submitting this assignment has passed.   **Due on 2018-07-30, 23:59 IST.**
As per our records you have not submitted this assignment.

1)   *2 points*

The projection of the vector $4\hat{\imath} - 3\hat{\jmath} + \hat{k}$ on the line passing through the p
$(2, 3, -1)$ and $(-2, -4, 3)$ is

(a) 0 (b) 1 (c) 9 (d) $\frac{1}{9}$

  ○ (a)
  ○ (b)
  ○ (c)
  ○ (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

2)   *2 points*

The work done in moving an object along straight line from $(3, 2, -1)$ to $(2, -$
in a force field given by $\vec{F} = 4\hat{\imath} - 3\hat{\jmath} + 2\hat{k}$ is

(a) 0 unit   (b) 5 unit   (c) 10 unit   (d) 15 unit

  ○ (a)
  ○ (b)
  ○ (c)
  ○ (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(d)

3)   *2 points*

The vector $\vec{A} = 3y^4 z^2 \hat{\imath} + 4x^3 z^2 \hat{\jmath} - 3x^2 y^2 \hat{k}$ is

(a) source   (b) sink   (c) solenoidal

  ○ (a)

4)   *2 points*

The vector $\vec{V} = \dfrac{-x\hat{i}-y\hat{j}}{\sqrt{x^2+y^2}}$ is a

(a) source vector   (b) sink vector   (c) solenoidal vector

○ (a)

○ (b)

○ (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

5)   *2 points*

The integral $\oint E.\,dl = 0$,if the electric field is caused by
(a) a time varying magnetic field   (b) a static electric charge   (c) both of
(d) none of these

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

6)   *2 points*

Which one of the following is not a characteristic of magneto static field
(a) It is conservative   (b) It is solenoidal   (c) Flux lines are always c
(d) Net magnetic flux through a closed surface is zero.

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a)

7)   *2 points*

A sample of gold having magnetic susceptibility (χ) -3.6×10^{-5} is placed
magnetizing field (H) of strength $60 \times 10^3\ A.\,turn/m.$ Find the mag
induction (B) within the sample.

(a) 0.05 T   (b) 0.1 T   (c) 0.075 T   (d) none of these.

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c)

8)   *2 points*

A conductor of length $0.4m$ is moving with a speed of $5m/s$ perpendicula
magnetic field of $1\ T$.The emf induced across the conductor is

(a) $1\ V$ (b) $0.2\ V$ (c) $2\ V$ (d) $0.1\ V$

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(c)

9)   *2 points*

The relative phase between the electric field and the magnetic field of an EM
in free space is

(a) $0°$ (b)$180°$ (c) $45°$ (d) $90°$

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

10)   *2 points*

The quantity $\mu_0\epsilon_0$ has the dimensions of

(a)$[L^2T^{-2}]$ (b)$[L^{-2}T^2]$ (c))$[LT^{-1}]$ (d))$[L^{-1}T]$

○ (a)

○ (b)

○ (c)

○ (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

End