Mathematical Methods of Physics-I

Internal Examination-2022

* Indicates required question

PHYSICS DEPARTMENT

1. Email *

Department of Physics, B. C. College, Asansol

2. NAME *

3. Registration Number *

4. MOBILE NUMBER *

Choose the Correct Option

5.

1. The sequence $\{(-1)^n\}=-1, 1, -1, \ldots$ is

(a) convergent

(b) divergent

(c) oscillatory

(d) none of these

Mark only one oval.

- a
- b
- c
- d

6.

2. If a finite number of terms be included or removed from an infinite series, the convergence or divergence is

(a) affected

(b) unaffected

(c) both (a) and (b)

(d) none of the above

Mark only one oval.

- a
- b
- c
- d

7.

3. The volume of the parrallelopiped with $\vec{A}, \vec{B}, \vec{C}$ as the coterminous edges is given by

(a) $\vec{A} \times (\vec{B} \times \vec{C})$

(b) $\vec{A} + (\vec{B} \times \vec{C})$

(c) $\vec{A} \cdot (\vec{B} \times \vec{C})$

(d) $\vec{A} + \vec{B} + \vec{C}$

Mark only one oval.

- a
- b
- c
- d

8.

4. If $\vec{\nabla} \times \vec{A} = 0$, then $\vec{A}$ is

(a) irrotational

(b) solenoidal

(c) axial

(d) rotational

Mark only one oval.

- a
- b
- c
- d

9.

5. If $\vec{\nabla}$ x $\vec{A}$ = 0, then $\vec{\nabla}.(\vec{A}$ x $\vec{r}$) is equal to

(a) 0

(b) 3

(c) 2

(d) 1

Mark only one oval.

- a
- b
- c
- d

10.

6. If $\vec{A}$ and $\vec{B}$ are irrotational, then $\vec{A}x\vec{B}$ is

(a) rotational

(b) irrotational

(c) solenoidal

(d) none of the above

Mark only one oval.

- a
- b
- c
- d

11. 7.

$y = cx - c^2$, is the general solution of the differential equation

(i) $(y')^2 - xy' + y = 0$ (ii) $y'' = 0$, (iii) $y' = c$, (iv) $(y')^2 + xy' + y = 0$

Mark only one oval.

- (i)
- (ii)
- (iii)
- (iv)

12. 8.

Given $3\begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+w & 3 \end{bmatrix}$

Find x, y, z and w.

Mark only one oval.

- x=1, y=2, z=3, w=4
- x=2, y=4, z=1, w=3
- x=1, y=3, z=5, w=1
- x=2, y=2, z=2, w=2

13. 9.

Inverse of $\begin{bmatrix} 4 & 3 \\ -7 & 1 \end{bmatrix}$ is

(i) $\begin{bmatrix} \frac{1}{4} & \frac{1}{3} \\ \frac{-1}{7} & 1 \end{bmatrix}$ (ii) $\frac{1}{25}\begin{bmatrix} 4 & 3 \\ -7 & 1 \end{bmatrix}$ (iii) $\frac{1}{25}\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ (iv) $\frac{1}{25}\begin{bmatrix} 1 & -3 \\ 7 & 4 \end{bmatrix}$

Mark only one oval.

- (i)
- (ii)
- (iii)
- (iv)

14. 10.

In the matrix equation $\begin{bmatrix} 3 & -1 \\ 2 & 5 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 4 \\ -3 \end{bmatrix}$ the values of x and y are

(i) $x = 3, y = -1$ (ii) $x = 2, y = 5$ (iii) $x = 1, y = -1$ (iv) $x = -1, y = 1$

Mark only one oval.

- (i)
- (ii)
- (iii)
- (iv)

Mathematical Methods of Physics-I

7 responses

Publish analytics

NAME

7 responses

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7 responses

103221220055

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103221220089

103221220064

103221220098

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Choose the Correct Option

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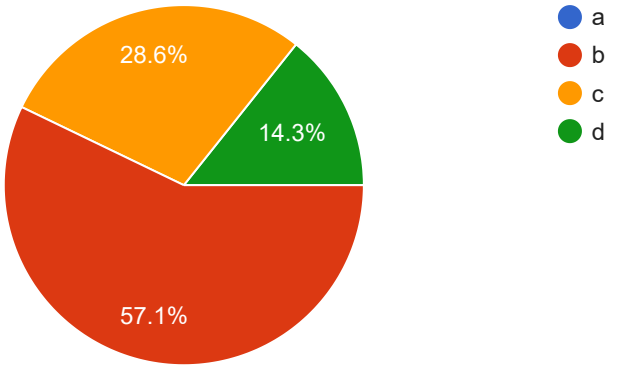

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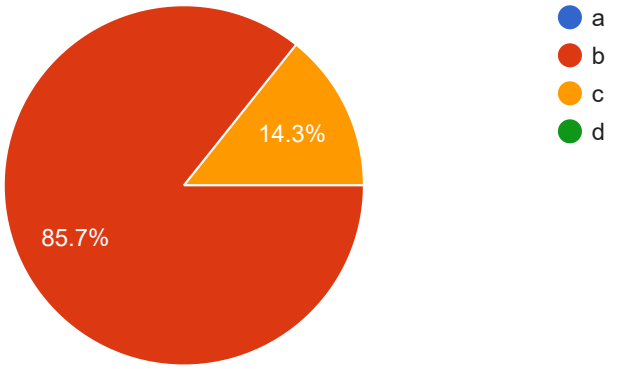

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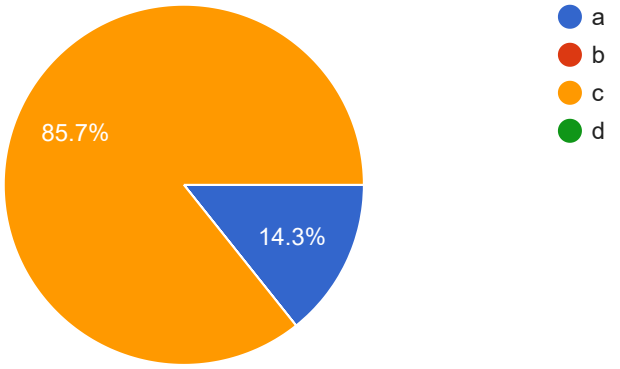

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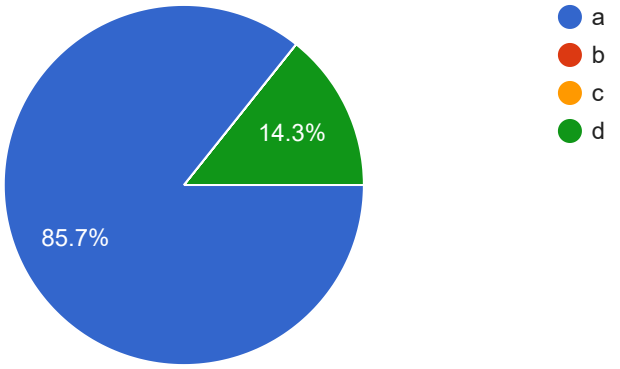

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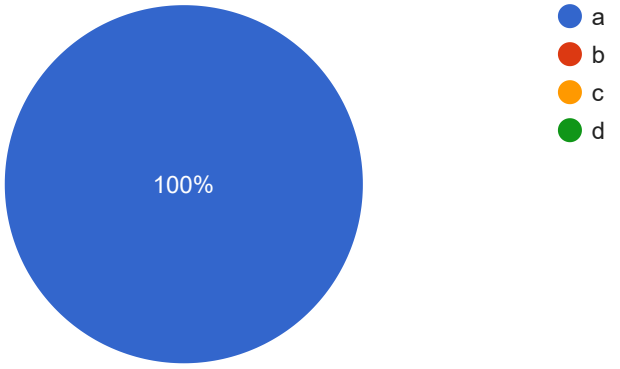

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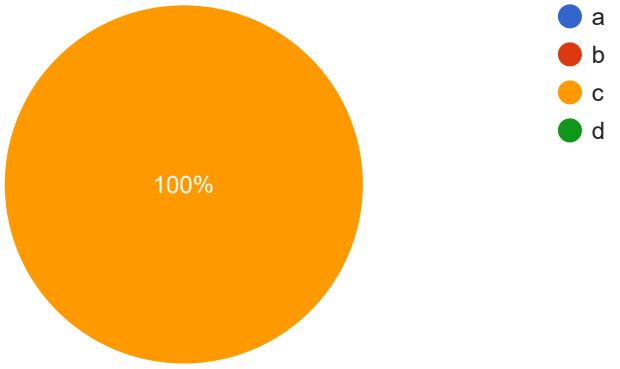

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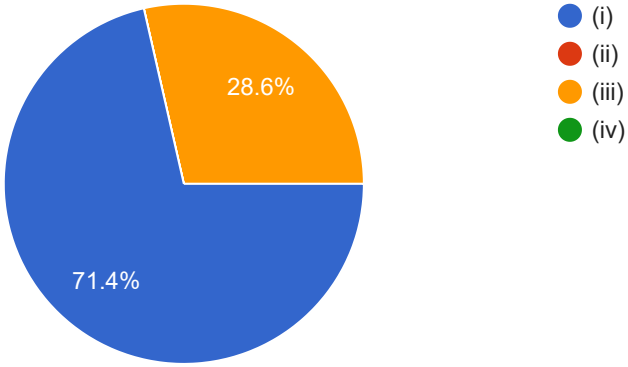

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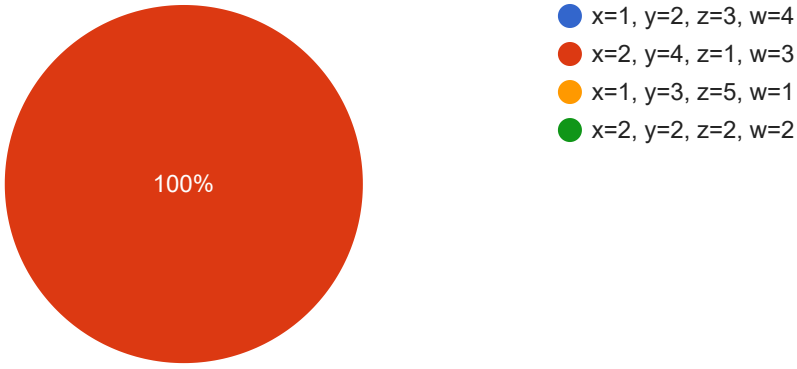

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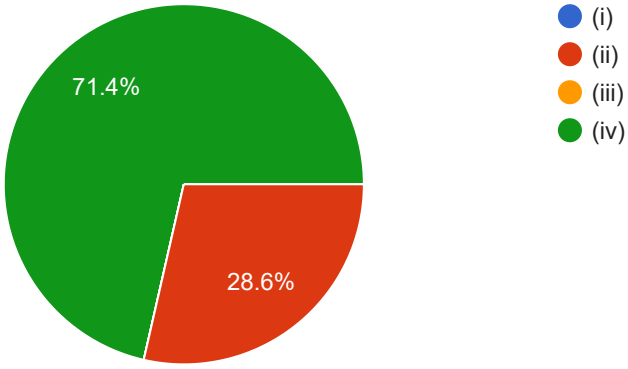

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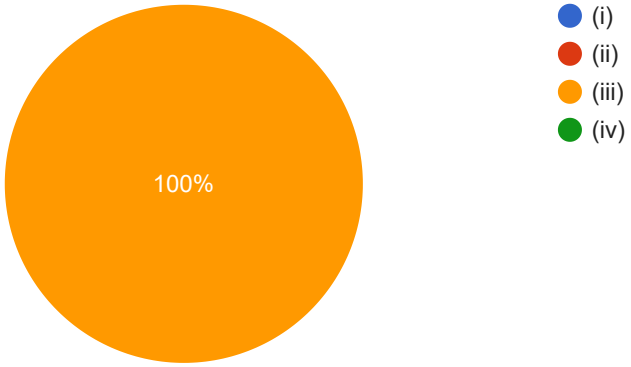

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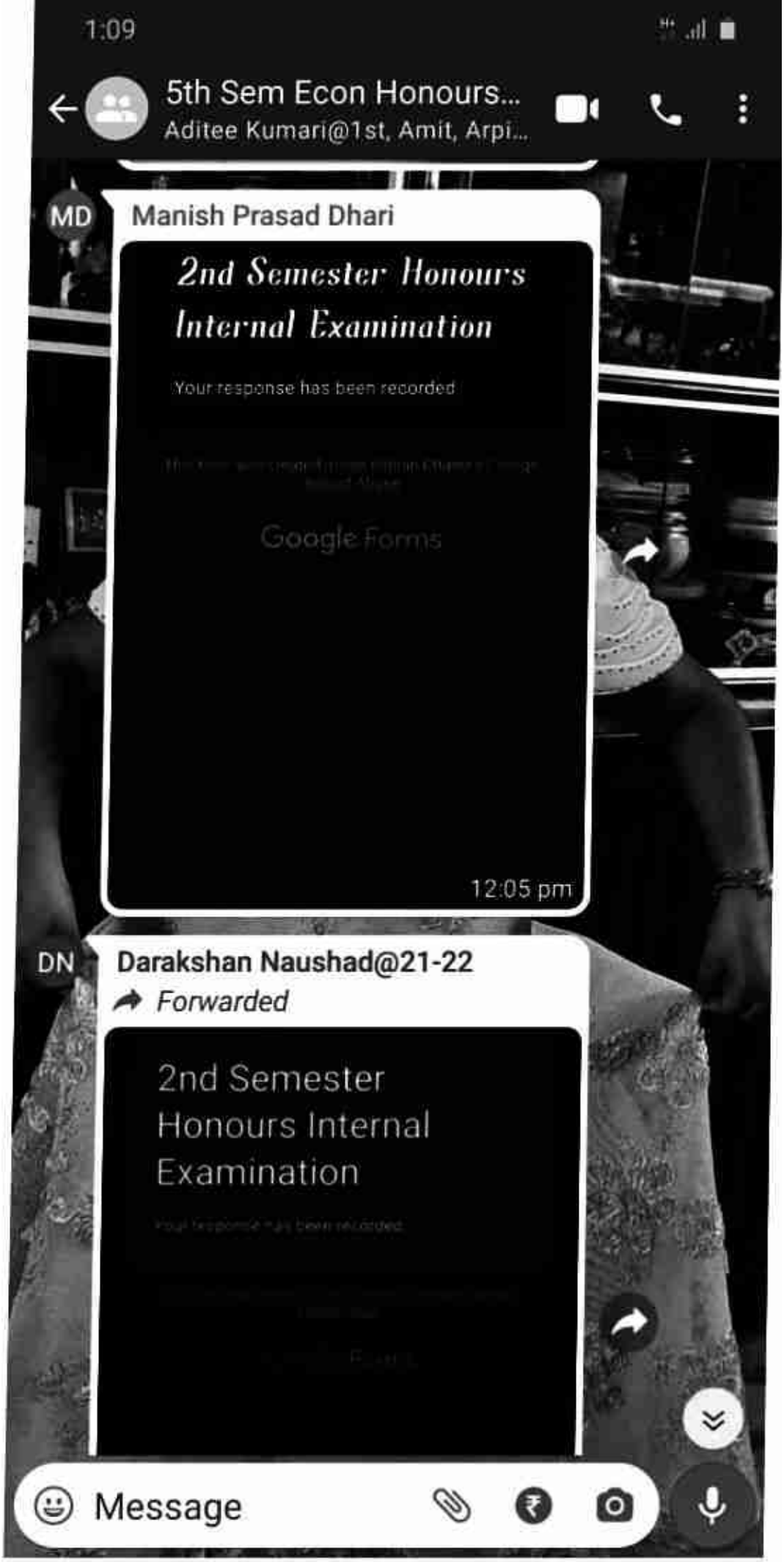
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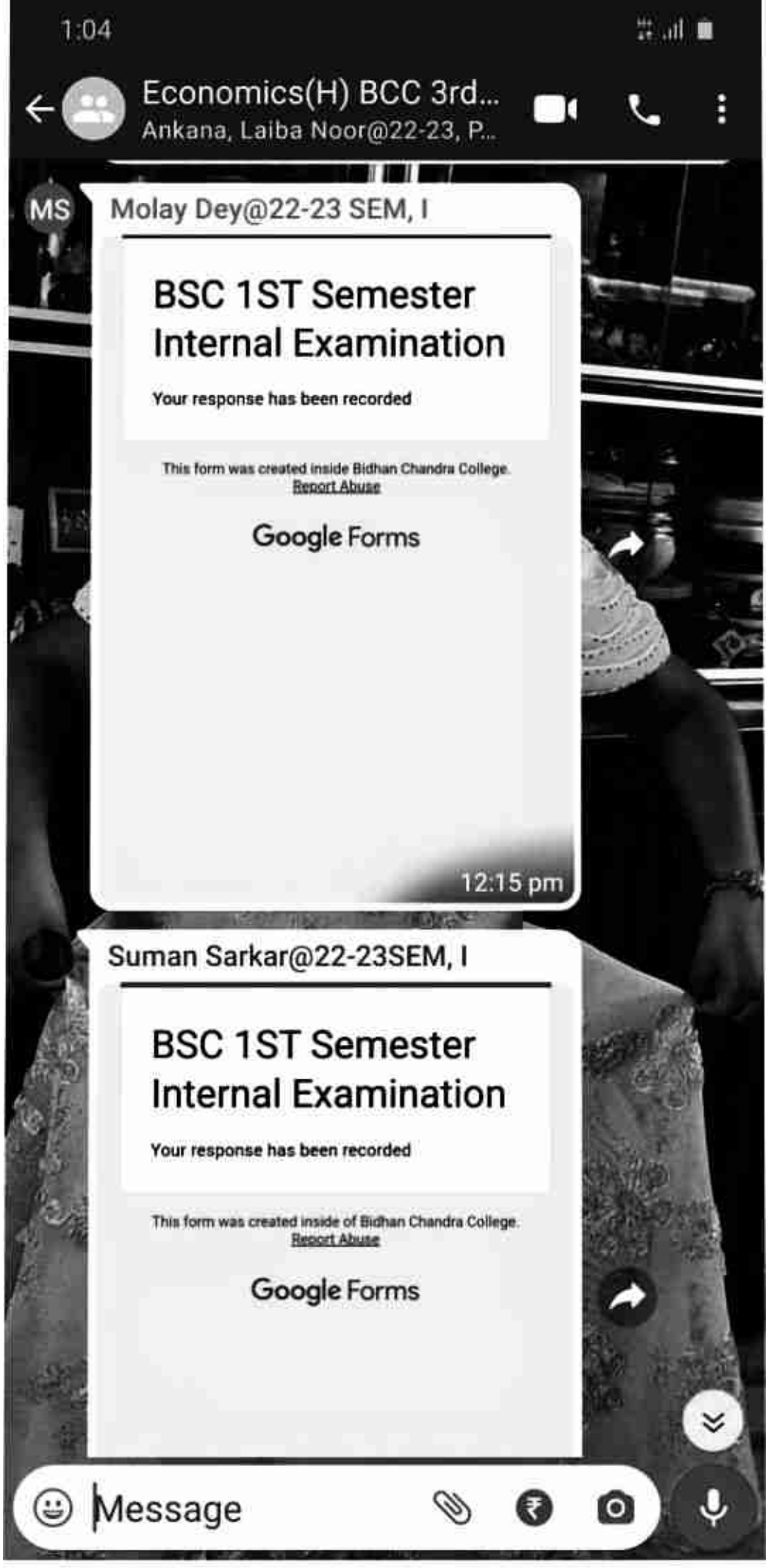
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