Classical Mechanics Internal

Name *

Vedika kadam

roll no. *

1212

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) T= m $(\dot{r}^2 + r^2\dot{\theta}^2)$

B) T= $\frac{1}{2}$ m $(\dot{r}^2 + r^2\dot{\theta}^2)$

C) T= 2m $(\dot{r}^2 + r^2\dot{\theta}^2)$

D) T= $\dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (●) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

D) $R=\lambda_i(\dot{\vec{r}}_i)^2$

- ( ) A
- ( ) B
- (●) C
- ( ) D

The equation of motion of a single particle is given by…….

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

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- ○ A
- ◉ B
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A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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D) $L = \frac{1}{2}m\left(1-\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Mrudula G. Goliwadekar

roll no. *

1208

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}\,m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (●) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) R=$\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) R=$2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) R=$\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

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- ( ) A
- ( ) B
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The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

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D) NONE OF THESE

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- ○ C
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Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \dots\dots n$. Then $\delta\bar{r_i} = \dots\dots\dots\dots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

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- ○ A
- ◉ B
- ○ C
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C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

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- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (●) A
- ( ) B
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A) torque

B) Linear momentum

C) velocity

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- ○ A
- ○ B
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If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

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- (●) A
- ( ) B
- ( ) C
- ( ) D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Sonali Sarjerao Sankpal

roll no. *

1233

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R= \lambda_i(\dot{r}_i)^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

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D) NONE OF THESE

- ( ) A
- (•) B
- ( ) C
- ( ) D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

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- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

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- ○ A
- ◉ B
- ○ C
- ○ D

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A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (●) A
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If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

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B) Linear momentum

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D) angular momentum

- ○ A
- ○ B
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- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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- ○ A
- ○ B
- ● C
- ○ D

Classical Mechanics Internal

Name *

Pruthviraj vikas patil

roll no. *

1225

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

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D) NONE OF THESE

- (selected) A
- B
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Expression for the Rayleigh's dissipation function is ....

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- A
- B
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- [ ] A
- [x] B
- [ ] C
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- ( ) A
- (•) B
- ( ) C
- ( ) D

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- (●) A
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- ○ A
- ○ B
- ○ C
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- (●) A
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A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Ruturaj bharat nemishte

roll no. *

1221

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ………..

A) $T= m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T= \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ( ) A
- (•) B
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- [x] A
- [ ] B
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- [ ] A
- [ ] B
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- ○ A
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- ○ A
- ◉ B
- ○ C
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- (selected) A
- B
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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Shubhangi shivaji todakar

roll no. *

1238

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ( ) A
- (•) B
- ( ) C
- ( ) D

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- C
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- A
- B
- (selected) C
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A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r}_i = \bar{r}_i(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta \bar{r}_i = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

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- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

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- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

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C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Classical Mechanics Internal

Name *

Vidula patil

roll no. *

1229

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ……….

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- [x] A
- [ ] B
- [ ] C
- [ ] D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

D) $R=\lambda_i(\dot{\vec{r}}_i)^2$

- [ ] A
- [ ] B
- [x] C
- [ ] D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ◯ A
- ◉ B
- ◯ C
- ◯ D

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A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

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- ○ A
- ◉ B
- ○ C
- ○ D

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- [ ] A
- [x] B
- [ ] C
- [ ] D

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- (●) A
- ( ) B
- ( ) C
- ( ) D

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A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

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- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Kolekar Shivani Tanaji

roll no. *

1218

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- [ ] A
- [x] B
- [ ] C
- [ ] D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (●) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

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c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

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- ( ) A
- ( ) B
- (●) C
- ( ) D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ( ) A
- (•) B
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Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

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B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

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- [ ] A
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- [ ] C
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Lagranges equation of motion is…

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- ○ A
- ○ B
- ○ C
- ◉ D

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A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

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D) angular momentum

- [ ] A
- [ ] B
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If the system is conservative then ....

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- B
- C
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Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

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- [ ] A
- [ ] B
- [x] C
- [ ] D

Classical Mechanics Internal

Name *

Aakanksha ingale

roll no. *

1209

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

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D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\boldsymbol{\Sigma}\lambda_i(\dot{\vec{r}_i})^2$

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- A
- B
- (selected) C
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The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

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- ◉ B
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- ○ A
- ◉ B
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- ○ A
- ◉ B
- ○ C
- ○ D

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- (selected) A
- B
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- [ ] A
- [ ] B
- [ ] C
- [x] D

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- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Arvind Arjun Parit

roll no. *

1223

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

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C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- [ ] A
- [x] B
- [ ] C
- [ ] D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (●) A
- ( ) B
- ( ) C
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Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

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- ( ) A
- ( ) B
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The equation of motion of a single particle is given by.......

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- ○ A
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- ○ A
- ◉ B
- ○ C
- ○ D

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- (selected) A
- B
- C
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If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

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- [x] A
- [ ] B
- [ ] C
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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Classical Mechanics Internal

Name *

Manisha Bhimrao Kamble

roll no. *

1213

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

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D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

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Expression for the Rayleigh's dissipation function is ....

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- A
- B
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- [ ] A
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- ( ) A
- (•) B
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B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total......is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- [ ] A
- [ ] B
- [ ] C
- [x] D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Vikas Maruti Patil roll no.1230

roll no. *

1230

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

D) $R=\lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta t} \delta t$

- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

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- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Classical Mechanics Internal

Name *

Ashwini Ashok Jadhav

roll no. *

1210

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) T= m $(\dot{r}^2 + r^2\dot{\theta}^2)$

B) T= $\frac{1}{2}$ m $(\dot{r}^2 + r^2\dot{\theta}^2)$

C) T= 2m $(\dot{r}^2 + r^2\dot{\theta}^2)$

D) T= $\dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

D) $R=\lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (•) A
- ( ) B
- ( ) C
- ( ) D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Shruti sunil khochage

roll no. *

1217

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) T= m $(\dot{r}^2 + r^2\dot{\theta}^2)$

B) T= $\frac{1}{2}$ m $(\dot{r}^2 + r^2\dot{\theta}^2)$

C) T= 2m $(\dot{r}^2 + r^2\dot{\theta}^2)$

D) T= $\dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R=\lambda_i(\dot{r}_i)^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ○ A
- ○ B
- ◉ C
- ○ D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- [ ] A
- [ ] B
- [x] C
- [ ] D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

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D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Classical Mechanics Internal

Name *

Asmita Adinath Chougule

roll no. *

1205

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T= m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T= \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T= 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T= \dot{r}^2 + r^2\dot{\theta}^2$

- ( ) A
- (•) B
- ( ) C
- ( ) D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

D) $R= \lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
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Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

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C) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (●) A
- ( ) B
- ( ) C
- ( ) D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

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- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Pratibha Narayan Mane

roll no. *

1220

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

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C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

D) $R=\lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

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C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

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- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- [x] A
- [ ] B
- [ ] C
- [ ] D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ◉ B
- ○ C
- ○ D

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- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- [ ] A
- [ ] B
- [x] C
- [ ] D

Classical Mechanics Internal

Name *

Sonali Shankar Bate

roll no. *

1202

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) T= m $(\dot{r}^2 + r^2\dot{\theta}^2)$

B) T= $\frac{1}{2}$ m $(\dot{r}^2 + r^2\dot{\theta}^2)$

C) T= 2m $(\dot{r}^2 + r^2\dot{\theta}^2)$

D) T= $\dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (•) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

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D) $R=\lambda_i(\dot{r}_i)^2$

- ( ) A
- ( ) B
- (•) C
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The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

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- ○ A
- ◉ B
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A) $\sum_{k=1}^{\infty} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

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- ○ A
- ◉ B
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- ○ A
- ○ B
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- (●) A
- ( ) B
- ( ) C
- ( ) D

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A) torque

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C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
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D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Sharayu Dinkar Durugale

roll no. *

1207

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T= m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T= \frac{1}{2} m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T= 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

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A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

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- A
- B
- (selected) C
- D

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A) $\bar{F} = \bar{P}$

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- ◉ B
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- ○ A
- ◉ B
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- ○ A
- ○ B
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- ○ D

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- (●) A
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B) Linear momentum

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- ○ A
- ○ B
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- (selected) A
- B
- C
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A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Mrunali Mahadev Solapure

roll no. *

1236

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
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A) THE FORCES ARE CONSERVATIVE

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- (selected) A
- B
- C
- D

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A) $R=\boldsymbol{\Sigma}\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\boldsymbol{\Sigma}\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\boldsymbol{\Sigma}\lambda_i(\dot{\vec{r}_i})^2$

D) $R=\lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

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A) $\bar{F} = \bar{P}$

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- ○ A
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- ◉ B
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- ○ A
- ○ B
- ◉ C
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A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

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- (selected) A
- B
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- ○ A
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- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Sakshi Vijay bhosale

roll no. *

1203

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

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A) THE FORCES ARE CONSERVATIVE

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C) BOTH OPTION 1 AND 2

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- [x] A
- [ ] B
- [ ] C
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- [ ] A
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- ○ A
- ○ B
- ◉ C
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- (selected) A
- B
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D) angular momentum

- [ ] A
- [ ] B
- [ ] C
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- ( ) B
- ( ) C
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A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

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- [ ] A
- [ ] B
- [x] C
- [ ] D

Classical Mechanics Internal

Name *

Poonam Regade

roll no. *

1232

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
- ○ D

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A) THE FORCES ARE CONSERVATIVE

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- (•) A
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- ○ A
- ○ B
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- (selected) A
- B
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D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Kajal Amar Patil

roll no. *

1224

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

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- ○ A
- ◉ B
- ○ C
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|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

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- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1-\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- [ ] A
- [ ] B
- [ ] C
- [x] D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Digvijay Ashok Khatkar

roll no. *

1216

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T= m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T= \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T= 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T= \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}}_i)^2$

D) $R=\lambda_i(\dot{\vec{r}}_i)^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r}_i = \bar{r}_i(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r}_i = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- A
- B
- C
- D (selected)

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Shivani Anil Sutar

roll no. *

1237

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\bar{r}}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{\bar{r}}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\bar{r}}_i)^2$

D) $R= \lambda_i(\dot{\bar{r}}_i)^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ( ) A
- (•) B
- ( ) C
- ( ) D

Let $\bar{r}_i = \bar{r}_i(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r}_i =$..........

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- [ ] A
- [ ] B
- [ ] C
- [x] D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1-\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Pragati prabhakar autade

roll no. *

1201

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ……….

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{\vec{r}_i})^2$

B) $R=2\Sigma\lambda_i(\dot{\vec{r}_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{\vec{r}_i})^2$

D) $R= \lambda_i(\dot{\vec{r}_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by…….

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1-\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (●) A
- ( ) B
- ( ) C
- ( ) D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- [ ] A
- [ ] B
- [ ] C
- [x] D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Shubham Tanaji Kamble

roll no. *

1215

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ( ) A
- (•) B
- ( ) C
- ( ) D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R=\lambda_i(\dot{r}_i)^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by…….

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

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D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Revati shridhar pishte

roll no. *

1231

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- [ ] A
- [x] B
- [ ] C
- [ ] D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (●) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R= \lambda_i(\dot{r}_i)^2$

- ( ) A
- ( ) B
- (●) C
- ( ) D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ( ) A
- (•) B
- ( ) C
- ( ) D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} =$..........

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- A
- B
- C
- D (selected)

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (x) A
- ( ) B
- ( ) C
- ( ) D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- [ ] A
- [ ] B
- [x] C
- [ ] D

Classical Mechanics Internal

Name *

Ankita Mahipati Sathe

roll no. *

1234

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- [x] A
- [ ] B
- [ ] C
- [ ] D

Expression for the Rayleigh's dissipation function is ....

A) $R = \Sigma \lambda_i (\dot{r}_i)^2$

B) $R = 2\Sigma \lambda_i (\dot{r}_i)^2$

c) $R = \frac{1}{2}\Sigma \lambda_i (\dot{r}_i)^2$

D) $R = \lambda_i (\dot{r}_i)^2$

- [ ] A
- [ ] B
- [x] C
- [ ] D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ( ) A
- (•) B
- ( ) C
- ( ) D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- A
- B
- C (selected)
- D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2} m \left(1 + \frac{c^2}{x^4}\right) \dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2} m \left(1 + \frac{c^2}{x^4}\right) \dot{x}^2 + \frac{mgc}{x}$

C) $L = m \left(1 + \frac{c^2}{x^4}\right) \dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2} m \left(1 - \frac{c^2}{x^4}\right) \dot{x}^2 - \frac{mgc}{x}$

- ○ A
- ○ B
- ◉ C
- ○ D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Shivaratna sunil Jamboni

roll no. *

1211

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) T= m $(\dot{r}^2 + r^2\dot{\theta}^2)$

B) T= $\frac{1}{2}$ m $(\dot{r}^2 + r^2\dot{\theta}^2)$

C) T= 2m $(\dot{r}^2 + r^2\dot{\theta}^2)$

D) T= $\dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (•) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R=\lambda_i(\dot{r}_i)^2$

- ( ) A
- ( ) B
- (•) C
- ( ) D

The equation of motion of a single particle is given by…….

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- A
- B (selected)
- C
- D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- [ ] A
- [x] B
- [ ] C
- [ ] D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ( ) A
- (•) B
- ( ) C
- ( ) D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ( ) A
- ( ) B
- (•) C
- ( ) D

Classical Mechanics Internal

Name *

Raju Vinod Kamble

roll no. *

1214

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2}m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m\,(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (selected) A
- B
- C
- D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r_i})^2$

B) $R=2\Sigma\lambda_i(\dot{r_i})^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r_i})^2$

D) $R=\lambda_i(\dot{r_i})^2$

- A
- B
- (selected) C
- D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ( ) A
- (•) B
- ( ) C
- ( ) D

Let $\bar{r}_i = \bar{r}_i(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r}_i = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta t} \delta t$

- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (●) A
- ( ) B
- ( ) C
- ( ) D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- ○ A
- ○ B
- ○ C
- ◉ D

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

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D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- ○ A
- ○ B
- ○ C
- ◉ D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Abhijeet Shelake

roll no. *

1235

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T= m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T= \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T= 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T= \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (•) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R=\lambda_i(\dot{r}_i)^2$

- ( ) A
- ( ) B
- (•) C
- ( ) D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r_i} = \bar{r_i}(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r_i} = \ldots\ldots\ldots\ldots$

A) $\sum_{k=1}^{\infty} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta q_k} \delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta \bar{r}_i}{\delta t} \delta t$

- ( ) A
- (•) B
- ( ) C
- ( ) D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- [ ] A
- [x] B
- [ ] C
- [ ] D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1+\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1-\frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinateq_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- [ ] A
- [ ] B
- [ ] C
- [x] D

If the system is conservative then ....

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- [ ] A
- [ ] B
- [x] C
- [ ] D

Classical Mechanics Internal

Name *

Vipul Vijay Deokare

roll no. *

1206

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

B) THE FORCES ARE NON CONSERVATIVE

C) BOTH OPTION 1 AND 2

D) NONE OF THESE

- (•) A
- ( ) B
- ( ) C
- ( ) D

Expression for the Rayleigh's dissipation function is ....

A) $R=\Sigma\lambda_i(\dot{r}_i)^2$

B) $R=2\Sigma\lambda_i(\dot{r}_i)^2$

c) $R=\frac{1}{2}\Sigma\lambda_i(\dot{r}_i)^2$

D) $R=\lambda_i(\dot{r}_i)^2$

- ( ) A
- ( ) B
- (•) C
- ( ) D

The equation of motion of a single particle is given by.......

A) $\bar{F} = \bar{P}$

B) $\bar{F} = \dot{\bar{P}}$

C) $\bar{F} = \ddot{\bar{P}}$

D) NONE OF THESE

- ○ A
- ◉ B
- ○ C
- ○ D

Let $\bar{r}_i = \bar{r}_i(q_j, t); j = 1, 2, 3 \ldots\ldots n$. Then $\delta\bar{r}_i =$..........

A) $\sum_{k=1}^{\infty} \frac{\delta\bar{r}_i}{\delta q_k}\delta q_k$

B) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k}\delta q_k$

C) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta q_k}\delta q_k + \delta t$

D) $\sum_{k=1}^{n} \frac{\delta\bar{r}_i}{\delta t}\delta t$

- ○ A
- ◉ B
- ○ C
- ○ D

Lagranges equation of motion is…

A) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = 0$

B) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = Q_j$

C) $\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_j}\right) - \frac{\partial T}{\partial q_j} = Q_j$

D) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_j}\right) - \frac{\partial L}{\partial q_j} = 0$

- ○ A
- ◉ B
- ○ C
- ○ D

A particle is constrained to move on a plane curve $xy = c$, under gravity then lagrangian is…

A) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

B) $L = \frac{1}{2}m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 + \frac{mgc}{x}$

C) $L = m\left(1 + \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

D) $L = \frac{1}{2}m\left(1 - \frac{c^2}{x^4}\right)\dot{x}^2 - \frac{mgc}{x}$

- (selected) A
- B
- C
- D

If the cyclic generalized co-ordinate q_j is such that dq_j represent the rotation of the system around some axis n then the total……is conserved along n.

A) torque

B) Linear momentum

C) velocity

D) angular momentum

- A
- B
- C
- D (selected)

If the system is conservative then ….

A) $p_j = \frac{\partial L}{\partial \dot{q}_j}$

B) $p_j = \frac{\partial T}{\partial \dot{q}_j}$

C) $p_j = -\frac{\partial L}{\partial \dot{q}_j}$

D) $p_j = \frac{\partial V}{\partial \dot{q}_j}$

- (selected) A
- B
- C
- D

Lagranges equation of motion for compound pendulum is…

A) $\ddot{\theta} + \frac{mgsin\theta}{I} = 0$

B) $\ddot{\theta} - \frac{mglsin\theta}{I} = 0$

C) $\ddot{\theta} + \frac{mglsin\theta}{I} = 0$

D) $\ddot{\theta} - \frac{mgsin\theta}{I} = 0$

- ○ A
- ○ B
- ◉ C
- ○ D

Classical Mechanics Internal

Name *

Sharad dhanaji patil

roll no. *

1227

Kinetic energy of a particle of mass m and position vector $\bar{r}$ in polar form is ....

A) $T = m(\dot{r}^2 + r^2\dot{\theta}^2)$

B) $T = \frac{1}{2} m(\dot{r}^2 + r^2\dot{\theta}^2)$

C) $T = 2m(\dot{r}^2 + r^2\dot{\theta}^2)$

D) $T = \dot{r}^2 + r^2\dot{\theta}^2$

- ○ A
- ◉ B
- ○ C
- ○ D

|If the work done by forces on the particle around a closed path in the force field is zero then ....

A) THE FORCES ARE CONSERVATIVE

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Classical Mechanics Internal

Name *

Rutuja Tanaji Patil

roll no. *

1226

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Classical Mechanics Internal

Name *

Abhishek Tambe

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1239

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