Gilbert Research Center Test Assignment

COMPLETED

Response ID	: XXR5BZXo
Start time	: Apr 29, 2024 16:37:36
Completion time	: May 05, 2024 13:46:15
Time taken	: 5 days 21 hrs 9 mins
Collector	: Test Assignment -2 (1)
Score	: 9/12 (75%)

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Gilbert Research Center -- Test Assignment - 2 -- Internship Program

Guidelines and Regulations to attend test assignment of Gilbert Research Center:

- Follow the deadline mentioned in the assignment
- Candidates can choose any time to write the test within the stipulated period or Stipulated days.
- “3” marks for the right answer and negative “2” marks for the wrong answer. All questions are not mandatory to attend.
- The question may be in any kind of format (Multiple Choice Question, Multiple Select Question, Choose Best Answers or Typographical Question).
- Use the registered Email-ID which you have used for Gilbert Research Center.

Deadline: 05/05/2024 Sunday 07:00 PM

Gilbert Research Center Test Assignment

Q2.

Field label	Response
First Name	Shruti
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Q3. Email

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Q4. 3/3

During weather forecasting study, the data scientist observed the pattern of the temperature of particular land and modelled as the function. Notation $\bar{Y}$ is represented as below

$$\bar{y} = \frac{1}{\operatorname{cosec}^3 x} + \frac{\cos^2 x}{\operatorname{cosec}^3 x} + \frac{\cos^4 x}{\operatorname{cosec}^3 x} + \ldots\ldots \infty$$

The modelled graphical function of the temperature pattern has been noted as Z. Temperature pattern Z is represented in following form. The notation of f(x) is denoted below

$$Z = \frac{\bar{y} \cdot x^7}{f(f(f(x)))} \qquad f(x) = x^2$$

Find the value of Z (temperature pattern) at x=0 ?

Enter the value

1

Q5. 3/3

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Data Scientist in the Photography entity taken a photograph of nature and its photograph of the nature has been observed in the matrix form specified below. The image matrix is represented as S

$$S = \begin{bmatrix} p & 1 & 0 & 0 \\ 2 & 2 & 0 & 0 \\ 0 & 0 & x & 1 \\ 0 & 0 & 3 & 1 \end{bmatrix}$$

$f(x) = 3x - 4x^3$

$g(x) = x^2 - x^4$

Above matrix represented image has missing the pixel like **x** and **p**. Missing value pixel **p** is equal to the that difference between **f(x)** and **g'(x).** The value of determinant of the image matrix is 6. Find the sum of missing pixel **x** and **p**.

Enter the value

8

Q6. 3/3

0.6x + hy ---------- Equation 1
0.8x + 0.6y ---------- Equation 2

System equation 1 & 2 represents the biological model of the system. Make this system as a matrix formation is denoted as **S**. Then realize it to the matrix formation denoted $\mathbf{S}^T$. Observe the value of unknown parameter h from the following relation of biological system matrix. Relation has the notation, that is represented as **Y**.

$$Y = [[SS^T]^T]^T - \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} = 0$$

Find the magnitude of unknown value of h.

Enter the value

0.8

Q7. 0/3

Gilbert Research Center Test Assignment

Underwater robot starts moving from the initial point (or) vector point v0 = (0,0) , its moves to the next point vector is v1=(1,0) and it's moves to the next point vector v2=(1,1). Find the distance between (v0 & v1), (v1&v2), (v0&v2) and apply pythagoras theorem after evaluating the distance find the angle θ (theta). Then substitute the θ value of to the system matrix of underwater robot is represented as **A**.

$$A = \begin{bmatrix} \cos(\theta) & \sec(k) \\ -\sec(k) & \cos(\theta) \end{bmatrix} \qquad \mathbf{k \rightarrow constant}$$

As a Data Scientist you working on the underwater robot expected to find out the determinant of $A^{T}A^{-1}$ of the system matrix of underwater robot.

Enter the value

Skipped