6406532844101. ✖ YourSELF, SOlution, friendLY

6406532844102. ✔ YourSELF, soLUtion, FRIENDly

Question Number : 54 Question Id : 640653845855 Question Type : MCQ
Correct Marks : 1
Question Label : Multiple Choice Question
The word '*incendiary*' is _____.
Options :
6406532844103. ✖ Trisyllabic
6406532844104. ✔ Polysyllabic
6406532844105. ✖ Disyllabic

Question Number : 55 Question Id : 640653845856 Question Type : MCQ
Correct Marks : 1
Question Label : Multiple Choice Question
The consonant cluster in the word *spill* is an instance of _____.
Options :
6406532844106. ✔ Initial CC
6406532844107. ✖ Final CC
6406532844108. ✖ Initial CCC
6406532844109. ✖ Final CCC

Sem1 Maths1

Section Id :	64065360605
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	13
Number of Questions to be attempted :	13
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0

Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653125995
Question Shuffling Allowed :	No

Question Number : 56 Question Id : 640653845857 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER I: MATHEMATICS FOR DATA SCIENCE I (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406532844110. ✔ YES

6406532844111. ✖ NO

Question Number : 57 Question Id : 640653845858 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

Instructions:

- There are some questions which have functions with discrete-valued domains (such as day, month, year etc).
- For NAT-type questions, enter only one right answer even if you get multiple answers for that particular question.
- Notations:
  - $\mathbb{R}$= Set of real numbers
  - $\mathbb{Q}$= Set of rational numbers
  - $\mathbb{Z}$= Set of integers
  - $\mathbb{N}$= Set of natural numbers
- The set of natural numbers includes 0.

Options :

6406532844112. ✔ Instructions has been mentioned above.

6406532844113. ✖ This Instructions is just for a reference & not for an evaluation.

Sub-Section Number :	2

Sub-Section Id : 640653125996
Question Shuffling Allowed : Yes

Question Number : 58 Question Id : 640653845859 Question Type : MCQ
Correct Marks : 3
Question Label : Multiple Choice Question
Which of the following statements is/are true about the function $f(x) = |x^2-4x+3|+17$?

Options :

6406532844114. ✖ f is defined only for all $x \in \mathbb{N}$.

6406532844115. ✖ f is a bijective function.

6406532844116. ✖ The range of f is $[0, \infty)$.

6406532844117. ✔ The minimum value of f is 17.

Sub-Section Number : 3
Sub-Section Id : 640653125997
Question Shuffling Allowed : Yes

Question Number : 59 Question Id : 640653845860 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question
Find the domain of the inverse function of $y = x^3 - 1$.

Options :

6406532844118. ✔ $\mathbb{R}$

6406532844119. ✖ $\mathbb{R} \setminus \{1\}$

6406532844120. ✖ $[1, \infty)$

6406532844121. ✖ $\mathbb{R} \setminus [1, \infty)$

Sub-Section Number : 4
Sub-Section Id : 640653125998
Question Shuffling Allowed : Yes

Question Number : 60 Question Id : 640653845861 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0
Question Label : Multiple Select Question
Choose the set of correct options.
Options :

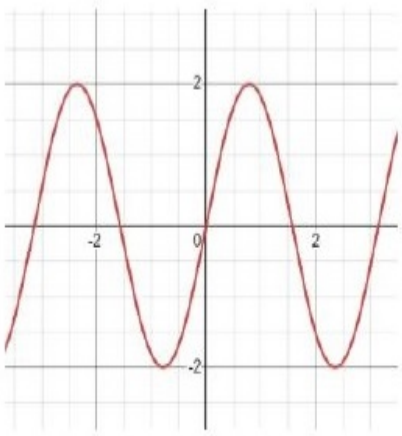
6406532844122. ✖ If $0 < b < 1$ and $0 < x < 1$ then $\log_b x < 0$

6406532844123. ✖ If $0 < b < 1$, $0 < x < 1$ and $x > b$ then $\log_b x > 1$

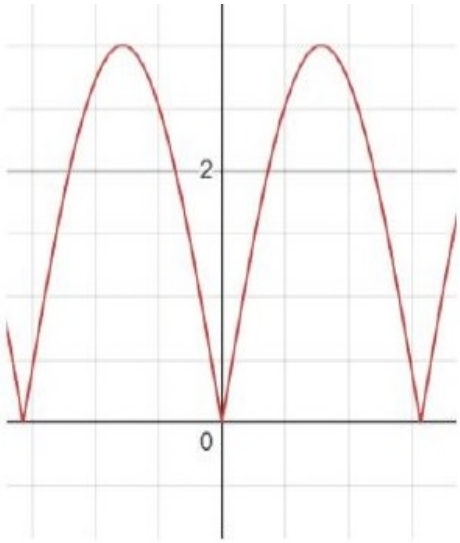
6406532844124. ✔ If $0 < b < 1$ and $0 < x < y$ then $\log_b x > \log_b y$

6406532844125. ✔ $\log_{10} 100$ is a rational number.

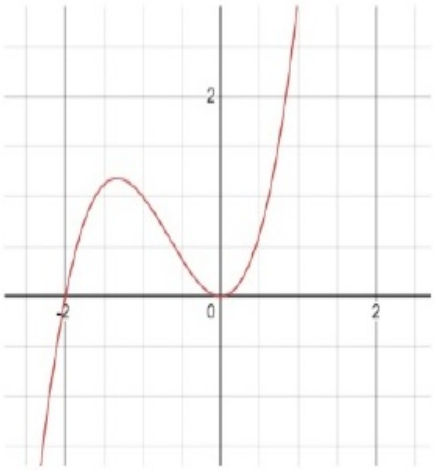
Question Number : 61 Question Id : 640653845864 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0
Question Label : Multiple Select Question
Consider the graphs given below:



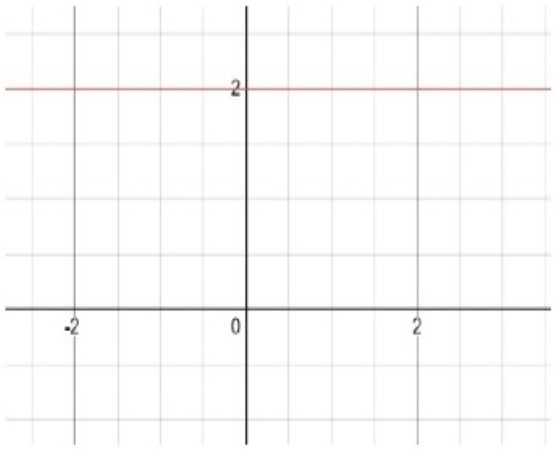
Curve-1



Curve-2



Curve-3



Curve-4

Choose the set of correct options:

Options :

6406532844128. ✔ There are at least two points between -4 and 4, where the derivatives of the function corresponding to Curve 1, are equal.

6406532844129. ✔ At the origin the derivative of the function corresponding to Curve 2 does not exist.

6406532844130. ✖ The derivative of the function corresponding to Curve 3, at the origin and point (−2, 0) are equal.

6406532844131. ✖ The derivative of the function corresponding to Curve 4 does not exist at any point.

Sub-Section Number :	5
Sub-Section Id :	640653125999
Question Shuffling Allowed :	Yes

Question Number : 62 Question Id : 640653845862 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

If $m^{\log_3 2} + 2^{\log_3 m} = 8$, then what is the value of m ?

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
9

Sub-Section Number :	6
Sub-Section Id :	640653126000
Question Shuffling Allowed :	Yes

Question Number : 63 Question Id : 640653845863 Question Type : SA
Correct Marks : 3
Question Label : Short Answer Question

If $f(x) = \sqrt{9 - x^2}$, then find out the value of $\sqrt{5} \times \lim_{x \to 2} \frac{f(x) - f(2)}{x - 2}$.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
-2

Sub-Section Number :	7
Sub-Section Id :	640653126001
Question Shuffling Allowed :	No

Question Id : 640653845865 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (64 to 66)
Question Label : Comprehension

Consider the function :

$$f(x)=\begin{cases}[x+1] & -3\le x<0\\ 0 & x=0\\ \{x+1\} & 0<x\le 3\end{cases}$$

Hint: [.] is the greatest integer function (floor function).
e.g., $[-1.32]=-2$, $[1.32]=1$, $[5]=5$. Similarly,
$\{.\}$ is the fractional part function, e.g., $\{1.32\}=0.32$, $\{5\}=0$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 64 Question Id : 640653845866 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question

Is the statement True or False:
The left-hand limit (LHL) and right-hand limit (RHL) of the given function $f(x)$ exist at $x=0$ and are equal to each other.

Options :

6406532844132. ✔ TRUE

6406532844133. ✖ FALSE

Question Number : 65 Question Id : 640653845867 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question

Is the statement True or False:
The function $f(x)$ is continuous at $x=0$.

Options :

6406532844134. ✔ TRUE

6406532844135. ✖ FALSE

Question Number : 66 Question Id : 640653845868 Question Type : SA
Correct Marks : 2
Question Label : Short Answer Question

Find the total number of points in $[-3,3]$ at which $f(x)$ is not continuous.

Response Type : Numeric
Evaluation Required For SA : Yes

Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
5

Question Id : 640653845875 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix
Question Numbers : (67 to 69)
Question Label : Comprehension
Consider the function :

$$f(x) = 4x^5 + x^2|x+1| + x + 5$$

Based on the above data, answer the given subquestions.
Sub questions

Question Number : 67 Question Id : 640653845876 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question
Is the statement True or False:
Left-hand derivative (LHD) and
Right-hand derivative (RHD)
of the function $f(x)$ exist and
are equal to each other at $x = -1$.

Options :
6406532844141. ✖ TRUE
6406532844142. ✔ FALSE

Question Number : 68 Question Id : 640653845877 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question
Is the statement True or False:
The function $|x+1|f(x)$ is
continuous at $x = -1$.

Options :
6406532844143. ✔ TRUE
6406532844144. ✖ FALSE

Question Number : 69 Question Id : 640653845878 Question Type : MCQ
Correct Marks : 2

Question Label : Multiple Choice Question

Is the statement True or False:
The derivative of the function f at $x = 0$ is 1.

Options :

6406532844145. ✔ TRUE

6406532844146. ✖ FALSE

Sub-Section Number :	8
Sub-Section Id :	640653126002
Question Shuffling Allowed :	No

Question Id : 640653845869 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (70 to 71)

Question Label : Comprehension

Answer the given subquestions.

Sub questions

Question Number : 70 Question Id : 640653845870 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

Calculate the limit of the following function :

$$f(x) = \begin{cases} x^2 - 2x + 4 & x \geq 0 \\ e^{x^2} + 3 & x < 0 \end{cases}$$

At $x = 0$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Number : 71 Question Id : 640653845871 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

Calculate the limit of the following function :

$$f(x) = \frac{x^4 - 3x^3 + 2}{x^4 - 5x^3 + 3x^2 + 1} \text{ at } x = 1$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Id : 640653845872 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix
Question Numbers : (72 to 73)
Question Label : Comprehension
Answer the given subquestions .
Sub questions

Question Number : 72 Question Id : 640653845873 Question Type : SA
Correct Marks : 2
Question Label : Short Answer Question
Find the limit of the following sequence.

$$\{a_n\} \text{ such that } a_n = \frac{6 + 6 \cdot 2^2 + 6 \cdot 3^2 + ... + 6 \cdot n^2}{\sqrt{4n^6 + 5}}$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 73 Question Id : 640653845874 Question Type : SA
Correct Marks : 2
Question Label : Short Answer Question
Find the limit of the following sequence.

$$\{a_n\} \text{ such that } a_n = \frac{100n^2 - 11}{100n^3 + 7}$$

Response Type : Numeric
Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Id : 640653845879 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (74 to 75)

Question Label : Comprehension

Answer the given sub-questions.

Sub questions

Question Number : 74 Question Id : 640653845880 Question Type : MCQ

Correct Marks : 2

Question Label : Multiple Choice Question

Is the statement True or False:
Let $L(x)$ be the linear approximation to $f(x) = xe^x - 1$ at the point a such that $f(a) = L(a)$ and the slope of the graph of L is $f'(a)$. Then

$L(x) = e^a(a+1)x - a^2e^a - 1.$

Options :

6406532844147. ✔ TRUE

6406532844148. ✖ FALSE

Question Number : 75 Question Id : 640653845881 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

Let f be a differentiable function at $x = 3$. The tangent line to the graph of the function f at the point $(3, 0)$, passes through the point $(5, 4)$. What will be the value of $f'(3)$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Sem1 Statistics1

Section Id :	64065360606
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	14
Number of Questions to be attempted :	14
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653126003
Question Shuffling Allowed :	No

Question Number : 76 Question Id : 640653845882 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER I: STATISTICS FOR DATA SCIENCE I (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406532844150. ✔ YES

6406532844151. ✖ NO

Question Number : 77 Question Id : 640653845883 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question