Sub-Section Number : 9
Sub-Section Id : 640653126850
Question Shuffling Allowed : Yes

Question Number : 64 Question Id : 640653852393 Question Type : SA
Correct Marks : 3
Question Label : Short Answer Question
Consider a function $f(x,y) = (x-1)^2 + (y-2)^2$. Using a gradient descent algorithm, with an initial guess of (0, 0) and learning rate of 0.1, what will be the absolute difference between the value of the function after first and second iteration? Enter the answer correct to three decimal places.
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
1.149 to 1.155

Question Number : 65 Question Id : 640653852394 Question Type : SA
Correct Marks : 3
Question Label : Short Answer Question
The value of a function at point 25 is 5. The values of the function's first and second order derivatives at this point are 0.1 and -0.002 respectively. What will be the function's approximate value at the point 25.1? (Enter the answer correct up to three decimal places).
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5.006 to 5.012

Business Analytics

Section Id : 64065360927
Section Number : 5
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 6
Number of Questions to be attempted : 6
Section Marks : 20

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 :	640653126851
Question Shuffling Allowed :	No

Question Number : 66 Question Id : 640653852395 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : BUSINESS ANALYTICS (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 :

6406532867071. ✔ YES

6406532867072. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	640653126852
Question Shuffling Allowed :	No

Question Id : 640653852396 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (67 to 74)

Question Label : Comprehension

Milo’s Evaluation (ME) is a loan default prediction company that uses manual workforce to suggest possible defaulters. Dr. Milo, the Chief Data Officer of ME, has decided to replace the manual workforce with a cutting-edge Logistic Regression Model that takes “Age” and “Income” as parameters to predict defaulters. The model is configured such that a “Defaulter” is categorised as the positive class. The final model had the parameters as specified in Table-1 below. To test the model, the data in Table-2 is used as test data. Given this information, answer the given subquestions.

Parameter (Independent variable)	Corresponding coefficient value (Beta value)
Intercept	+3.2
Age (in tens of years)	-1.7
Income (in Lakhs of INR per month)	+1.4

Table-1

Customer ID	Age (in tens of years)	Income (in Lakhs INR per month)	Past Loan Repayment Status
CID01	4.0	0.8	DEFAULTER
CID02	5.3	3.0	DEFAULTER
CID03	2.7	2.5	NOT DEFAULTER
CID04	3.5	2.8	NOT DEFAULTER
CID05	4.7	2.0	NOT DEFAULTER

Table-2

Sub questions

Question Number : 67 Question Id : 640653852397 Question Type : SA
Correct Marks : 0.5
Question Label : Short Answer Question
At a threshold of 0.8, how many “True Positives” is the model predicting?
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 68 Question Id : 640653852398 Question Type : SA
Correct Marks : 0.5
Question Label : Short Answer Question
At a threshold of 0.8, how many “True Negatives” is the model predicting?
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
0

Question Number : 69 Question Id : 640653852399 Question Type : SA
Correct Marks : 0.5
Question Label : Short Answer Question
At a threshold of 0.8, how many “False Positives” is the model predicting?
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
3

Question Number : 70 Question Id : 640653852400 Question Type : SA
Correct Marks : 0.5
Question Label : Short Answer Question
At a threshold of 0.8, how many “False Negatives” is the model predicting?
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 71 Question Id : 640653852401 Question Type : SA
Correct Marks : 1
Question Label : Short Answer Question
At a threshold of 0.5, what is the ACCURACY of the model? (*Note:* **Enter the answer in “%”** *rounded to two decimal places without the “%” symbol. For example, if the answer is “1.234%”, then enter it as “1.23”*)
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
20

Question Number : 72 Question Id : 640653852402 Question Type : SA
Correct Marks : 1
Question Label : Short Answer Question

At a threshold of 0.5, what is the PRECISION of the model for predicting the Negative Class? (*Note:* **Enter the answer in "%"** *rounded to two decimal places without the "%" symbol. For example, if the answer is "1.234%", then enter it as "1.23"*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 73 Question Id : 640653852403 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

At a threshold of 0.5, what is the RECALL of the model for predicting the Positive Class? (*Note:* **Enter the answer in "%"** *rounded to two decimal places without the "%" symbol. For example, if the answer is "1.234%", then enter it as "1.23"*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

50

Question Number : 74 Question Id : 640653852404 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

At a threshold of 0.5, what is the SENSITIVITY of the model? (*Note:* **Enter the answer in "%"** *rounded to two decimal places without the "%" symbol. For example, if the answer is "1.234%", then enter it as "1.23"*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

25

Sub-Section Number :	3
Sub-Section Id :	640653126853
Question Shuffling Allowed :	No

Question Id : 640653852405 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (75 to 76)

Question Label : Comprehension

A demand response curve has a constant elasticity of +0.4. If the price of the product is 100 and the corresponding demand is 200, then answer the given subquestions.

Sub questions

Question Number : 75 Question Id : 640653852406 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

What is the intercept for the curve? (*Note: Enter the answer rounded to two decimal places. For example, if the answer is "1.234", then enter it as "1.23"*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1261 to 1262

Question Number : 76 Question Id : 640653852407 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

What should be the price to achieve a demand of 300? (*Note: Enter the answer rounded to two decimal places. For example, if the answer is "1.234", then enter it as "1.23"*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

35 to 38

Question Id : 640653852420 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (77 to 78)

Question Label : Comprehension

The demand of a product is estimated to follow the relationship: D(p) = 1444 – 3(p^2). Here, "p" is the selling price for the product. The product is made at Rs. 50 per unit. Given this information, answer the given subquestions.

Sub questions

Question Number : 77 Question Id : 640653852421 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If you intend to maximize the revenue, then what is optimal value for “p”? (*Note: Enter the answer rounded to two decimal places. For example, if the answer is “1.234”, then enter it as “1.23”*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

12.50 to 12.70

Question Number : 78 Question Id : 640653852422 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If you intend to maximize the profits, then what is optimal value for “p”? (Note: Enter the answer rounded to two decimal places. For example, if the answer is “1.234”, then enter it as “1.23”)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

37 to 38

Sub-Section Number :	4
Sub-Section Id :	640653126854
Question Shuffling Allowed :	No

Question Id : 640653852408 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (79 to 83)

Question Label : Comprehension

“Fake Money (FM)” is an investment consulting firm.

Dr. Milo has approached FM with Rs. 1,00,000 for guidance on investment opportunities. Dr. Milo wants to invest the entire Rs. 1,00,000. FM’s top financial analyst recommends that all new investments be made in oil industry, steel industry or government bonds. Specifically, the analyst identified five investment opportunities and projected their annual rates of returns (which are specified in Table-1). Dr. Milo, is a guy who likes to distribute his investments. Hence, he has specified the following requirements to the analyst

1. Neither industry (oil or steel) should receive more than Rs. 50,000
2. Government bonds should be at least 25% of the steel industry investments
3. The investments in Bongu Oil, the high-return but high-risk investment, cannot be more than 60% of total oil industry investment

Investment Opportunity	*Projected Annual Rate of Return (in %)*
Dhokha Oil	7.3
Bongu Oil	10.3
Achchha Steel	6.4
Nalla Steel	7.5
Government Bonds	4.5

Given this information, answer the subquestions

Sub questions

Question Number : 79 Question Id : 640653852409 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

How many decision variable(s) is/are present in the standard form of the primal?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Text Areas : PlainText

Possible Answers :

1

5

Question Number : 80 Question Id : 640653852410 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

How many constraints (excluding the non-negativity constraints) is/are present in the standard form of the primal?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 81 Question Id : 640653852411 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

How many constraints (excluding the non-negativity constraints) are present in the dual (which is based on the standard form of the primal)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

5

Question Number : 82 Question Id : 640653852412 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If FM has suggested the below distribution of investments, then how much money (total money) is projected to be in hand at the end of the first year? (*Note:* **Enter the answer in "Rs."** *rounded to two decimal places without the "Rs." symbol. For example, if the answer is "Rs. 1.234", then enter it as "1.23"*)

Investment Opportunity	*Amount Invested (in Rs.)*
Dhokha Oil	20,000
Bongu Oil	30,000
Achchha Steel	0
Nalla Steel	40,000
Government Bonds	10,000

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

108000

Question Number : 83 Question Id : 640653852413 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If FM has suggested the below distribution of investments, then how many decision variables in the dual will have a non-zero value?

Investment Opportunity	*Amount Invested (in Rs.)*
Dhokha Oil	20,000
Bongu Oil	30,000
Achchha Steel	0
Nalla Steel	40,000
Government Bonds	10,000

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
5

Question Id : 640653852414 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (84 to 88)
Question Label : Comprehension
A multiple linear regression model, as specified below is fit on a data set with 50 data points.

$$\text{MLR Model: } Y = 4.1 - 0.4 * X_1 + 4.2 * X_2 - 0.5 * X_3 + \varepsilon$$

Then answer the given subquestions
Sub questions

Question Number : 84 Question Id : 640653852415 Question Type : SA
Correct Marks : 1
Question Label : Short Answer Question
How many degrees of freedom are present for the “Residuals” in the ANOVA Table?
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
46

Question Number : 85 Question Id : 640653852416 Question Type : SA
Correct Marks : 1
Question Label : Short Answer Question

How many degrees of freedom are present for the “Regression” in the ANOVA Table?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 86 Question Id : 640653852417 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

How many total degrees of freedom are present for the fitted model in the ANOVA Table?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

49

Question Number : 87 Question Id : 640653852418 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If the SSE and SST for the model are 900 and 1400 respectively, then what is the value for the model’s F-statistic? (*Note: Enter the answer rounded to two decimal places. For example, if the answer is “1.234”, then enter it as “1.23”*)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

8.4 to 8.8

Question Number : 88 Question Id : 640653852419 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

If the SSE and SST for the model are 900 and 1400 respectively, then what is the Adjusted R-square value for model? (*Note:* **Enter the answer in “%”** *rounded to two decimal places without the “%” symbol. For example, if the answer is “1.234%”, then enter it as “1.23”*)

Response Type : Numeric

Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
31 to 32

Java

Section Id :	64065360928
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	16
Number of Questions to be attempted :	16
Section Marks :	100
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 :	640653126855
Question Shuffling Allowed :	No

Question Number : 89 Question Id : 640653852423 Question Type : MCQ
Correct Marks : 0
Question Label : Multiple Choice Question
THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : PROGRAMMING CONCEPTS USING JAVA (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 :
6406532867095. ✔ YES