

**20IT6302:MACHINE LEARNINGHOMEASSIGNMENT-2QUESTIONS**

**A.Y:2022-23**

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| **Q.No** | **Question** | **Course Outcome** | **BTL** |
| 1 | |  |  |  | | --- | --- | --- | | **S.No** | **y** | **x** | | **1** | **4** | **4** | | **2** | **6** | **3** | | **3** | **8** | **1** | | **4** | **2** | **1** | | **5** | **3** | **-4** | | **6** | **-2** | **-2** | | **7** | **-4** | **2** | | **8** | **-4** | **-3** |   Find univariate regression equation in the format y=w\*x+b based on the above data | CO2 | Apply |
| 2 | |  |  |  | | --- | --- | --- | | **S.No** | **y** | **x** | | **1** | **14** | **24** | | **2** | **16** | **23** | | **3** | **18** | **21** | | **4** | **12** | **21** | | **5** | **13** | **16** | | **6** | **8** | **18** | | **7** | **6** | **22** | | **8** | **2** | **17** |   Find univariate regression equation in the format y=w\*x+b based on the above data | CO2 | Apply |
| 3 | Find univariate regression equation in the format y=w\*x+b based on the data  https://digitalpress.fra1.cdn.digitaloceanspaces.com/mhujhsj/2022/09/image-22.png | CO2 | Apply |
| 4 | |  |  |  |  | | --- | --- | --- | --- | | **S.No** | **Attribute 1** | **Attribute 2** | **y** | | **1** | **4** | **4** | **18** | | **2** | **6** | **3** | **12** | | **3** | **8** | **1** | **25** | | **4** | **2** | **1** | **24** | | **5** | **3** | **-4** | **8** | | **6** | **-2** | **-2** | **20** | | **7** | **-4** | **2** | **17** | | **8** | **-4** | **-3** | **15** |   Find multivariate regression equation in the format y=w0+w1\*x1+ w2\*x2 based on the above data | CO2 | Apply |
| 5 | |  |  |  |  | | --- | --- | --- | --- | | **S.No** | **y** | **X1** | **X2** | | **1** | **14** | **24** | **12** | | **2** | **16** | **23** | **8** | | **3** | **18** | **21** | **14** | | **4** | **12** | **21** | **8** | | **5** | **13** | **16** | **3** | | **6** | **8** | **18** | **5** | | **7** | **6** | **22** | **7** | | **8** | **2** | **17** | **9** |   Find multivariate regression equation in the format y=w0+w1\*x1+ w2\*x2 based on the above data | CO2 | Apply |
| 6 | Find multivariate regression equation in the format y=w0+w1\*x1+ w2\*x2 based on the above data   |  |  |  |  | | --- | --- | --- | --- | | **S.No** | **Hours (x1)** | **Concentration index (x2)** | **y** | | **1** | **2** | **3** | **21** | | **2** | **5** | **5** | **47** | | **3** | **3** | **4** | **27** | | **4** | **8** | **5** | **75** | | **5** | **3** | **2** | **30** | | **6** | **4** | **4** | **35** | | **7** | **6** | **3** | **55** | | **8** | **7** | **4** | **70** | | CO2 | Apply |
| 7 | |  |  |  |  | | --- | --- | --- | --- | | **S.No** | **Attribute 1** | **Attribute 2** | **Class** | | **1** | **4** | **4** | **+** | | **2** | **6** | **3** | **+** | | **3** | **8** | **1** | **+** | | **4** | **2** | **1** | **+** | | **5** | **3** | **-4** | **-** | | **6** | **-2** | **-2** | **-** | | **7** | **-4** | **2** | **-** | | **8** | **-4** | **-3** | **-** |   **Identify the separating boundary ofpositive and negative samples using SVM algorithm.** | CO2 | Apply |
| 8 |  | CO2 | Apply |
| 9 | Find the class of species if {blood type=cold, give birth=yes, can fly=yes, live in water=sometimes} using decision tree induction algorithm. | CO2 | Apply |
| 10 | Predict the label of above sample by applying the tree model with the training data given. | CO2 | Apply |
| 11 | Usingdecision treeclassificationfindtheclasslabelofthetuple:  presbyopic,hypermetrope,yes,normal | CO2 | Apply |
| 12 | Givenadatatuplehavingthevalues*“systems,”“26...30,”*and*“46–50K”*forthe attributes*department,age*,and*salary*,respectively,whatwouldadecision treeclassificationofthe*status*forthetuplebe? | CO2 | Apply |
| 13 | Use decision tree classification to predict label of the 8th tuple. | CO2 | Apply |
| 14 | Low no fever yes yes ?  Use decision tree classification for the above label prediction. | CO2 | Apply |
| 15 | Use decision tree classification for predicting the class label of the instance {color=red, Type=SUV, origin=domestic} | CO2 | Apply |
| 16 | Use decision tree classification for predicting the class label of the instance {outlook=rainy, temarature=cool, humidity= high, wind=strong.} | CO2 | Apply |
| 17 | Use decision tree classification for predicting the class label of the above sample instance | CO2 | Apply |
| 18 | Apply decision tree induction for the following Pie dataset inorder to predict the class of the given instance sample x. | CO2 | Apply |

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| **Regd.No** | **Question.**  **No’s** | **Regd.No** | **Question.**  **No’s** |
| 266 | 1,6,7,8 | 291 | 3,4,7,12 |
| 267 | 2,5,7,9 | 292 | 1,5,7,14 |
| 268 | 3,4,7,10 | 293 | 2,4,7,16 |
| 269 | 1,4,7,11 | 294 | 3,6,7,18 |
| 270 | 2,5,7,12 | 295 | 1,4,7,9 |
| 271 | 3,6,7,13 | 296 | 2,6,7,11 |
| 272 | 1,5,7,14 | 297 | 3,5,7,13 |
| 273 | 2,6,7,15 | 298 | 1,6,7,15 |
| 274 | 3,4,7,16 | 299 | 2,4,7,17 |
| 275 | 1,6,7,17 | 2A0 | 3,5,7,8 |
| 276 | 2,5,7,18 | 2A1 | 1,6,7,18 |
| 277 | 3,4,7,18 | 2A2 | 2,5,7,17 |
| 278 | 1,6,7,17 | 2A3 | 3,4,7,16 |
| 279 | 2,5,7,16 | 2A4 | 1,4,7,15 |
| 280 | 3,4,7,15 | 2A5 | 2,5,7,14 |
| 281 | 1,4,7,14 | 2A6 | 3,6,7,13 |
| 282 | 2,5,7,13 | 2A7 | 1,6,7,12 |
| 283 | 3,6,7,12 | 2A8 | 2,5,7,11 |
| 284 | 1,6,7,11 | 2A9 | 3,4,7,10 |
| 285 | 2,5,7,10 | 2B0 | 1,4,7,9 |
| 286 | 3,4,7,9 | 2B1 | 2,5,7,8 |
| 287 | 1,5,7,8 | 2B2 | 3,6,7,17 |
| 288 | 2,4,7,12 | 2B3 | 1,6,7,18 |
| 289 | 3,5,7,13 | 2B4 | 2,5,7,8 |
| 290 | 1,6,7,14 | 2B5 | 3,4,7,9 |
| 2B6 | 2,6,7,15 | 2C6 | 1,5,7,10 |
| 2B7 | 3,5,7,16 | 2C7 | 2,6,7,11 |
| 2B8 | 1,4,7,17 | 2C8 | 3,4,7,12 |
| 2B9 | 2,4,7,18 | LE7 | 1,5,7,13 |
| 2C0 | 3,5,7,8 | LE8 | 2,6,7,14 |
| 2C1 | 1,6,7,9 | LE9 | 3,4,7,15 |
| 2C2 | 2,5,7,10 | LE10 | 1,6,7,16 |
| 2C3 | 3,4,7,11 | LE11 | 2,5,7,17 |
| 2C4 | 1,5,7,8 | LE12 | 3,4,7,18 |
| 2C5 | 2,6,7,10 |  |  |