MM: 25   TIME:1 HRS

Q.1 a) What is software engineering? Mention two reasons for the need of Software Engineering.   2

     b) What is the difference between unit testing and system testing in a software process?   2

     c) What do you understand by software prototyping? Name the process model that uses   2
         prototyping approach.

     d) Mention one advantage and one disadvantage of component-based model.   2

     e) Name the two software delivery models? Which of these is best suited for large-scale system   2
         development

Q.2 a) What do you understand by a cumulative histogram?   1

     b) Write a python program to create a bar chart with the following information: 3

Country	Population
China	150
India	140
USA	55
Russia	40
England	60

         The bar chart should have the following features:
             i)   The Title should be 'World Population Stats'
             ii)   The X axis label should be Countries
             iii)   The Y axis label should be Population
             iv)   The bars should have the colour Red

     c) Which type of plot is best suited to describe the correlation between two variables?   1

     d) Draw a sample box plot and label its components.   2

Q.3 a) Mention the any four guidelines for Agile Manifesto.   2

     b) Mention two advantages of Pair programming.   2

     c) Which member of Scrum team is responsible for making sure that the scrum has been   1
         understood and enacted?

Q.4 a) What will be the output of the following python code: 2
         import numpy as np
         a = np.array([[6,5,4],[3,4,5],[1,2,3]], dtype=np.int32)
         print(np.sum(a, axis=1))

     b) Write python code to create a 4 cross 4 identity matrix.   1