



Register Number:

Date:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE – 27
M.Sc BIG DATA ANALYTICS – I SEMESTER
SEMESTER EXAMINATION –OCTOBER 2019
BDA 1418: COMPUTING FOR DATA SCIENCE

Time: 2 1/2 hrs.

Maximum marks: 70 marks

This Question Paper Contains Two Printed Pages and One Part

Answer ALL

1. College wants to tap into the archive data generated by students and teachers. The college Principal entrust you with these tasks.
 - a. Explain significance of data analysis. (5 Marks)
 - b. What kind of algorithm he should use to gain insights from the data? (2 marks)
 - c. What kind of problems can be solved using analytics? (3 marks)
2. What is an algorithm? Write pseudo code for all searching algorithms. (10 Marks)
3.
 - a. Define Optimization. (2 Marks)
 - b. Find the root for the given function using any of the numerical analysis method using graphical representation show how the solution is reached (8 marks)
$$f(x) = 3x^2 - 4$$
4. Find the optimal solution for the problem using Gradient Descent Method (10 Marks)
$$f(x, y) = 5x^2 + 4xy + 14x - 6y - y^2 + 20$$
5. Explain the properties for random numbers. Explain the role of Monte carol simulation in Data Science. (10 marks)
6. Generate 5 random no. using linear & Multiple Congruential method when $a=12$, $m=10$, $c=5$. (10 Marks)

7. Theodore's gift shop places orders for Christmas items during a trade show in July. One item to be ordered is a dated sterling silver tree ornament. The ornament will sell for \$80.

The best estimate for demand is:

Demand	Probability
5	0.2
6	0.25
7	0.3
8	0.25

The ornaments cost \$55 when ordered in July. Ornaments unsold by Christmas are marked down to half price and always sell during January. How many ornaments should be ordered?

(10 marks)