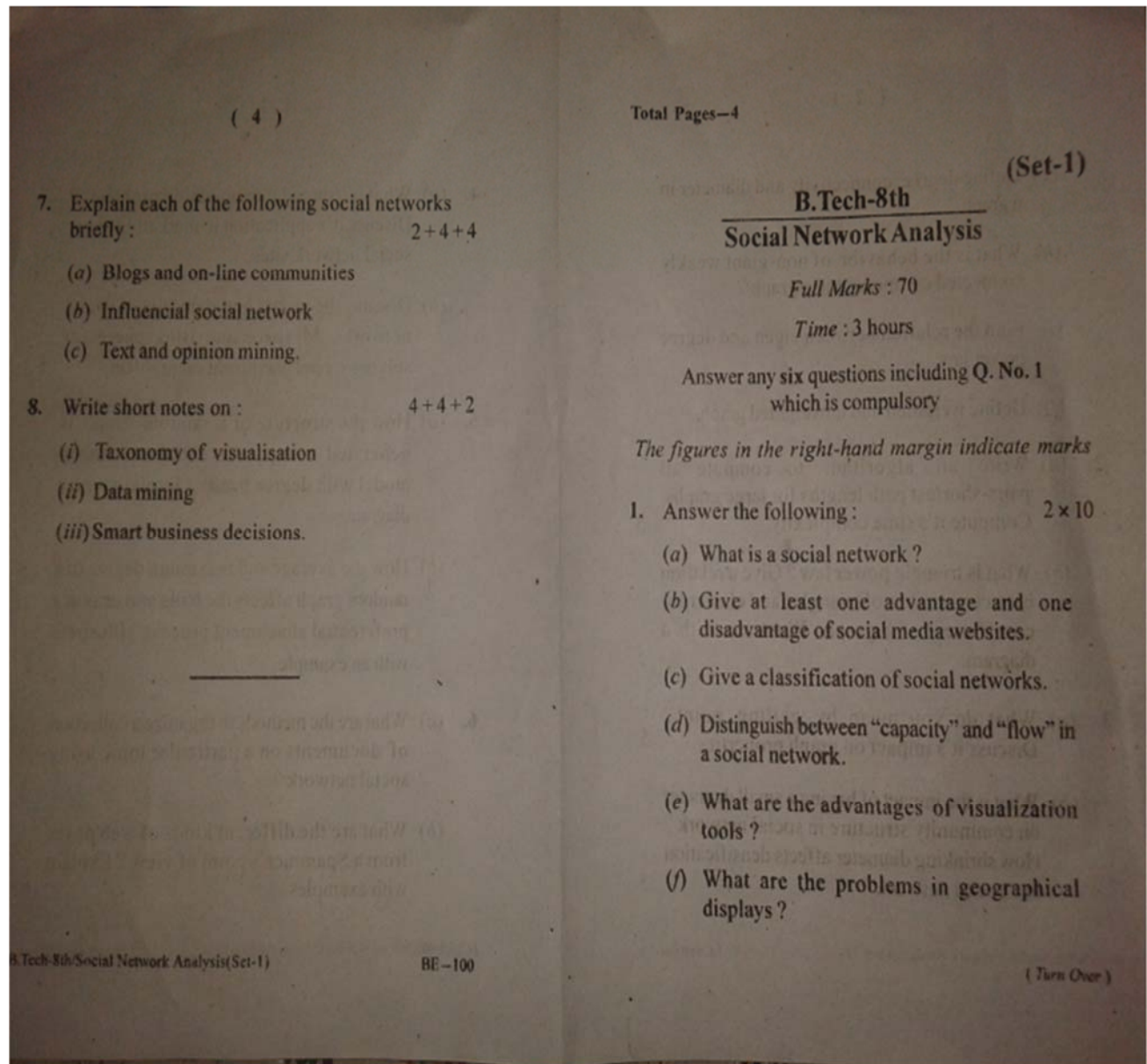


VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
& INFORMATION TECHNOLOGY
SESSION 2014-2015 (EVEN SEMESTER)



(2)

- (g) Define degree, connectivity and diameter in a graph.
- (h) What is the behavior of non-giant weakly connected component in a graph?
- (i) Find the relation between eigen and degree power law.
- (j) Define weighted and unweighted graph.
2. (a) Write an algorithm to compute all pairs-shortest path lengths for large graphs. Compute its time complexity. 5
- (b) What is triangle power law? Give a relation between number of triangles and clustering co-efficient of a graph. Illustrate with a diagram. 5
3. (a) What do you mean by gelling point? Discuss its impact on graph properties. 5
- (b) What is the impact of having a small diameter on community structure in social network? How shrinking diameter affects densification in a social network? 5

(3)

4. (a) What is "spread maximization problem"? Discuss its application in marketing using social network sites. 5
- (b) Discuss the merits and demerits of social networks Myspace and Blogosphere for solving spread maximization problem. 5
5. (a) How the structure of a random graph is generated using preferential attachment model with degree bands? Explain with a diagram. 5
- (b) How the average and maximum degree of a random graph affects the balls and urns in a preferential attachment process? Illustrate with an example. 5
6. (a) What are the methods to organize a collection of documents on a particular topic using social network? 5
- (b) What are the different kinds of web pages from a Spammer's point of view? Explain with examples. 5