ARTEC2025 Assignment 01
(Due Date: October 22, 2025)

Question 1

In this question, you need to download and read the following paper for the answers. (As a doctoral student, you should know how to download it!)

Liljeros, F., Edling, C. R., Amaral, L. A. N., Stanley, H. E., & Aberg, Y. (2001). The web of human sexual contacts. *Nature*, 411(6840), 907-908.

(a) What social network the authors investigated?

(b) How did the authors collect data for analysis?

(c) Which year and which country the data was collected?

(d) State two key properties of a scale-free network.

(e) How possibly the results presented in the paper are applied in a safe-sex campaign?

(f) In the paper, the authors have mentioned a few factors which might explain why some respondents have more sexual partners than the others. What are they?

(g) Describe the mechanism of preferential attachment in the formation of a scale-free network. (Look up the information from the references cited in the paper.)

(h) Comment, with explanation, if the investigation could be replicated by you.

(i) *Nature* is a prestigious journal. It has been indexed in the Web of Science. What is the journal impact factor (JIF) of *Nature*, according to the latest Journal Citation Report (JCR).

(j) State three journal articles which have cited this paper.

(k) What is the research method that the authors have designed?

(l) What is(are) the limitation(s) of the result(s) presented in this paper?

Question 2

In this question, you need to download and read the following paper for the answers. (As a doctoral student, you should know how to download it!)

Sum, J., Wu, J., Leung, C. S., & Ho, K. I. J. (2008). Analysis on a simulated model for Gnutella topology: Connectedness and extension. *International Journal of Computers and Applications*, 30(4), 279-288.

(a) What research problem(s) the authors investigated?

(b) What is(are) the motivation(s) for the authors to conduct this research?

(c) How did the authors validate their claim(s) (equivalently, their hypothesis)?

(d) State at least one journal paper which cited this paper.

(e) What is the journal impact factor (JIF) of *International Journal of Computers and Applications*, according to the latest Journal Citation Report (JCR).