JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE IN

INFORMATION AND COMMUNICATION TECHNOLOGY

3RD YEAR 1ST SEMESTER 2018/2019 ACADEMIC YEAR

COURSE CODE: ICT 3314

COURSE TITLE: ICT DIFFUSION, TRANSFER & ADOPTION

EXAM VENUE: **STREAM:** (ICT)

DATE: **EXAM SESSION:**

TIME: 2.00 HOURS

INSTRUCTIONS:

1. **Answer Question 1 (Compulsory) and ANY other two questions**
2. **Candidates are advised not to write on the question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (COMPULSORY-30 MARKS)

a. Looking beyond traditional growth accounting for possible explanations of the invisibility of ICT productivity impacts, one important factor can be found from the way ICT products have been conceptualized. Identify and briefly explain the one way.

6 Marks

b. Though ICT adoption and implementation in an organization is regarded as beneficial to the organization and key stakeholders; in equal measure it can be regarded as disruptive. Briefly explain your understanding of the statement. 5 Marks

c. Identify the key constructs of Normalization Process Theory (NPT), and briefly explain their influence or what they mean in the ICT implementation process within an organization. 8 Marks

d. According to Rosenberg 1972, it is diffusion rather than invention or innovation that ultimately determines the pace of economic growth and the rate of change of productivity. Discuss. 6 Marks

e. From the user and investor point of view, ICT investments could be described as "composite resources." Discuss. 5 Marks

QUESTION TWO: 20 MARKS

a. Different research studies have identified ICT as an enabler and hence beneficial both to the firm and the stakeholders; yet in the developing economies, its adoption, implementation and routinization has often faced a number of challenges. Identify 5 Key barriers and 5 key facilitators to these processes. 10 Marks

b. Network effects in adoption can arise from two different but related reasons, often characterized as direct and indirect.
   i. Briefly explain network effects 3 Marks
   ii. Distinguish between direct and indirect characteristics of network effects.

4 Marks

c. DeLone and McLean (1992) reviewed prior research studies and introduced a comprehensive taxonomy of factors contributing to the success of information systems. Identify the six major categories as enumerated by DeLone & McLean. 3 Marks

QUESTION THREE: 20 MARKS

a. Different theories, models and frameworks have included environmental factor as a key influencing factor in the adoption, diffusion and implementation of an innovation/technology in a firm. In your view, discuss the roles of environmental factors in this debate. 6 Marks

b. Technology Acceptance Model (TAM) has been greatly used to explain acceptance of an innovation by individuals within an organization. Identify SIX (6) main constructs of this model. 6 Marks

c. Transfer and Diffusion on one hand and on the other hand Social Embeddedness Perspectives in Research on IS and Culture affect ICT development (ICTD). Discuss.

8 Marks

QUESTION FOUR: 20 MARKS

a. Four-in balance Model has predominantly been used in the education sector to help explain success or failure in adoption and diffusion of ICT in schools. Identify the FOUR constructs of the model and briefly explain the role of each construct.   12 Marks

b. State the FOUR major arguments which support the positive role of firm size and market share in determining the level of innovative activity in a firm as identified by Dorfman (1987)   8 Marks

QUESTION FIVE: 20 MARKS

a. Policy-makers, managers, professionals, and users, broadly all face two important problems as they try to get innovations into practice. Identify the two problems and briefly explain what each entail.   6 Marks

b. A number of factors interact in different ways to influence the adoption and implementation of ICT in an organization. They may be industry-specific e.g in e-Health or are often seen across many industries. Identify any FOUR and briefly explain each. 8 Marks

c. Describe how adoption and implementation of an innovation/technology in an organization shapes as well as being reshaped by the innovation/technology. Give specific cases where possible.   6 Marks