JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR THE DEGREE IN SCIENCE IN CONSTRUCTION MANAGEMENT

3RD YEAR 1st SEMESTER 2017/2018 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCM 3312

COURSE TITLE: CONSTRUCTION PROJECT PLANNING AND CONTROL

EXAM VENUE: LR 5 **STREAM: BSc CONSTRUCTION MGT**

DATE: 13/12/2017 **EXAM SESSION: 2.00 – 4.00PM**

DURATION: 2 HOURS

Instructions

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

QUESTION ONE (30Marks)

a. Discuss with the aid of a diagram the Maslow's need theory. (10 Marks)
b. i. Define Control. (2Marks)
   ii. Discuss three types of control in construction organisation (6Marks)
c. i. Define Motivation. (2Marks)
   ii. Discuss the two types of motivation. (6Marks)
d. Briefly distinguish between project evaluation and project monitoring (4Marks)

QUESTION TWO (20Marks)

a. Define linear Programming (3Marks)

b. With the aid of a well annotated diagram explain the region of feasible solution , and optimal
c. Solutions (11Marks)

d. Define the following terminologies:- (6Marks)
   I. Decision Variable
   II. Objective function
   III. Constraints

QUESTION THREE (20Marks)

a. With the aid of a diagram define the following terms:
   I. Node or event (2.5 Marks)
   II. Activity (2.5 Marks)
   III. Network (3 Marks)

b. A construction project consists of 6 activities whose relevant information is given below:

Activity	*Description*	*Required Predecessor*	*Duration*
A	Product design	(None)	5 months
B	Market research	(None)	1
C	Production analysis	A	2
D	Product model	A	3
E	Sales brochure	A	2
F	Cost analysis	C	3
G	Product testing	D	4
H	Sales training	B, E	2
I	Pricing	H	1
J	Project report	F, G, I	1

Required:

i. Construct the network for the project (7 Marks)
ii. Define critical path (2Marks)
iii. Identify critical path from the above network (3Marks)

QUESTION FOUR (20Marks)

a. Define inventory (3Marks)

b. List any four tools of Operation Research (4 Marks)

b. Discuss the negative effects of:

i. Too large stock/inventory in construction oriented organization (4Marks)

ii. Too small stock/inventory in construction oriented organization (4Marks)

c. A stockist has to supply 400 units of a product every Monday to his customers. He gets the product at a cost of Kshs 50 per unit from the manufacturer. The cost of ordering and transportation from the manufacturer is Kshs 75 per order. The cost of carrying inventory is 7.5% of the cost of product.

Required:

Calculate the economic lot size to be maintained (Hint one year has 52 Mondays) (5Marks)

QUESTION FIVE (20Marks)

a) With aid of a well annotated arrow diagram discuss and distinguish the four stages in a project life cycle. (8 Marks)

b) State and Discuss the seven principles of planning applicable to a construction organization (7Marks)

c) Briefly distinguish between Theory X Managers and Theory Y managers (5 Marks)