

**BACHELOR OF SCIENCE IN CIVIL AND STRUCTURAL ENGINEERING DEGREE
SECOND SEMESTER EXAMINATIONS 2013/14 ACADEMIC YEAR**

COURSE CODE: CSE 504

COURSE TITLE: ETHICS,LAW AND ENGINEERING /PROFESSIONAL PRACTISE

Instructions to Candidates

- (i) Answer all questions in section A**
- (ii) Answer any question in section B**
- (iii)Duration: Time: 3hrs**

SECTION A

QUESTION 1 (15 Marks)

The Turkana County Power Authority (TCPA) awarded a Built Operate and Transfer (BOT) contract to Jiangxi Non Ferrous Contractor (JNFC) for supply and installation of Wind Turbines for its renewable energy project. JNFC on the other hand awarded various sub-contracts for works and supplies that included a sub-contract to Oriental Supplies (OS) for supply of oils, fuels and lubricants.

- (a) Explain the procedures required for TCPA to enter into a valid contract with JNFC. (5 marks)
- (b) Explain the obligations of JNFC and OS in this contract (3 marks)
- (c) If there was a breach of contract between JNFC and OS, state under what extraneous circumstance could OS enjoin TCPA in a suit where OS claims damages against JNFC? (2 marks)
- (d) State two circumstances that would render the Contract between TCPA and JNFC unserviceable (2 marks)
- (e) If you were the Site Agent for JNFC explain what your responsibilities would be (3 marks)

Question 2 (20 marks)

Assume you are Project Engineer (PE) for a water supply project to supply water to residents of Jinja township. The Contract has been awarded to Mukono Waterworks Contractors. The Contract Period is 12 months and currently we are in the 8th month. The Contractor has just submitted the following progress report in table Q2.1 to the PE and is requesting for valuation of works done to date and preparation of the third interim certificate. The second interim certificate is as shown in Table Q2.2 for your information and reference. Assume upper limit of retention has not been exceeded.

Table Q2.1

ITEM	Details of Progress
1	Requested deposit to KPLC has been paid in full
2	Length excavated for 100mm dia pipeline is 2000m
3	One Sedimentation tank is complete
4	Two filtration units are complete
5	Adminstration Building is 75% complete
6	Laying of 100mm dia GI pipes has not changed since previous certificate
7	Intake works are 80% complete

Table Q2.2

2nd INTERIM CERTIFICATE FOR MUKONO WATERWORKS CONTRACTORS

Item	Description	Quantity	Unit	Rate (Kshs)	Amount (Kshs)	Tender Amount (Kshs)
1	Allow a PC sum of Kshs 7,000,000 for KPLC connection	1	Sum	7,000,000	2,000,000	7,000,000
2	Excavated for 100mm dia pipeline	5,000	m	2,000	2,500,000	10,000,000
3	Construction of Sedimentation tanks	3	No	8,000,000	8,000,000	24,000,000
4	Construction of filtration units	3	No	7,000,000	7,000,000	21,000,000
5	Construction of Adminstration Building.	1	No	4,000,000	1,000,000	4,000,000
6	Laying of 100mm dia GI pipes.	5,000	m	4,000	6,000,000	20,000,000
Sub Total					26,500,000	84,000,000
A	Value of work done to date				26,500,000	
B	Less payments made to date	1 st interim certificate		23,500,000		
C	Amount due for 2 nd interim certificate				3,000,000	
D	Less 10% retention			300,000		
E	Amount payable to contractor				2,700,000	

The amount payable to Mukono Water Works is Two million and Seven Hundred Thousand Kenya shillings only in figures Kshs 2,700,000 only

Signed

Name of PE

Date

- (a) Prepare and present the 3rd interim certificate (8 marks)
- (b) What is the value of total physical work done by the Contractor as percentage of contract sum? Is the contractor progressing as per the contract programme of work? (3 marks)
- (c) What is amount payable to the Contractor under interim certificate No. 3? (2 marks)
- (d) Show by calculation the amount for retention monies under Certificate Nos. 1,2 and 3. If the upper limit of retention is 5% of contract sum what amount is still due from the contractor? (2 marks)
- (e) Why does the employer withhold the retention money? (2 marks)
- (f) Explain how retention money is released is released to the Contractor. (3 marks)

Question No.3 (15 marks)

- (a) If you were a site agent of a particular project what would be expected of you? (2marks)
- (b) Draw a chart to illustrate the staff you expect in a Resident Engineer's office. (7 marks)
- (c) Discuss the limitations of the Resident Engineer (5)
- (d) What role do the Engineering Assistants play on a construction site? (1 mark)

Question No.4 (10 Marks)

- (a) What do you understand by the term Variation? (2 marks)
- (b) Outline the procedure for arbitration (8 marks)

Question No.5 (10 marks)

- (a) Engineers Board of Kenya is responsible for registration of Engineers as per CAP 43 of 2011. Explain five functions of EBK (5 marks)
- (b) What are the classes of registration that are allowed by the EBK Act and explain when one can use the title "Reg. Eng". (5 marks)

SECTION B

Question No.6 (10 Marks)

- (a) What is a Bid Bond? Under what circumstances may the employer liquidate this bond? (2 marks)
- (b) What is a Performance Bond? When may the Employer liquidate this Bond (2 Marks)
- (c) What are the components of Contractor's All Risks policy (CAR) (5 marks)
- (d) Supposing a Contractor during the Defects Liability Period fails to remedy a defect. Explain how you would deal with this situation. (1 mark)

Question No.7 (10 Marks)

- (a) What are Specifications in Civil Engineering Contracts? (2 Marks)
- (b) How would you prepare "Specifications" for a given contract. Explain in detail how you would go about this (4 marks)
- (c) What is a claim? Explain how you would assess a claim. (2 Marks)
- (d) What are liquidated damages? Explain (2 Marks)