

Note:- For all questions

For Soil: Unit weight of dry soil is 1.8 t/m^3 and for saturated soil = 2.1 t/m^3 . Angle of repose

* Use distributed L.L. of 500 Kg/m^2 .

* Use concentrated L.L. of 60 t Lorry.

Question (1) (18 degrees)

It is required to construct a Tail Escape at the end of canal at site (C) to escape the excess from canal to main drain. If the escaped discharge = 10 % of the canal discharge, it is required to;

- a) Design the well, the orifice and the drainage pipe of the Escape.
- b) Draw fully dimensioned sketch for Sectional elevation of the Escape.

Question (2) (20 degrees)

At the site (B), it is required to constructed a R. C. Girder Bridge has a girder of 6.0 m spacing. The roadway over bridge = 8.0 ms with two foot path each = 1.0 m. it is required to;

- a) Calculate the B.M. used for design of the slab and girder,
- b) Draw section side view of the R.C. Bridge.

Question (3) (22 degrees)

A R.C. box type Syphon is to be constructed at the intersection at point (A) between the branch drain and canal;

Requirements:-

- a) Give the hydraulic calculations and check the heading-up.
- b) Find the loading intensities affect on culver part of the siphon for possible cases of loading.
- c) Draw the U.S. Sectional Elevation of the Syphon.

Question (4) (25 degrees)

For the given cross section of the main drain, at site (D), approximately the same cross section site (C), it is required to construct a R.S.J. bridge on screw piles using the following data:

- 1) Roadway over bridge = 6.0 ms with two foot path each = 1.0 m.
- 2) Take the weight of steel joist or cross girder about 90 kg/m.
- 3) Assume Impact coefficient = 20 %.
- 4) Allowable normal stress of timber = 80 kg/cm and allowable shear stresses = 16 kg/cm.

Required:

- a) For No heading up, Design the super-structures (Main planks, Steel joists and Cross beams).
- b) Show how Screw piles of the bridge can be designed.
- c) Draw;
 - i) P.H.E.R (Plan half earth removed). (3 #)
 - ii) Section elevation. (2 #)

Question (5) (15 degrees)

Design a Gravity Retaining Wall for a road according to the following requirements;

- 1) Height of the wall is 3.0 ms.
- 2) Coefficient of friction is 0.60.
- 3) Live load is 1.0 t/m^2 .
- 4) Bearing capacity of soil is 1.5 kg/m^2
- 5) The Ground Water Level 1.0 m under ground surface.

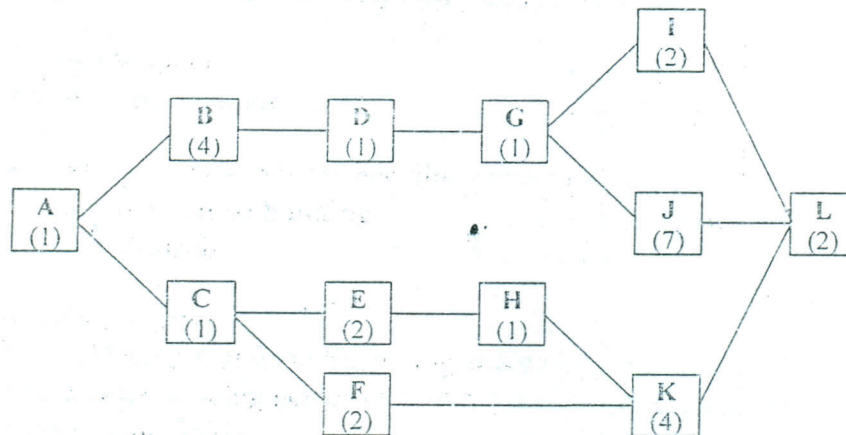
Question 2: (23 Marks)

a. State True (T) or False (F):

(5 marks)

1. The critical activities can be determined easily when using the bar chart.
2. The network must have definite points of beginning and end.
3. The network must be continuous from start to end.
4. A forward pass is used to determine late start and late finish times.
5. The time for completing a project is equal to the sum of the individual activity times.

b. Perform PDM calculations for the project below and determine activity times. Durations are shown on the activities. (13 marks)



c. Estimate the labor cost for the formwork of a continuous wall footing that has a quantity of 500 m². The activity is constructed by crew that has a daily output of 485 m²/day, and consists of: 3 carpenters at rate LE 21.60/hr & 1 building labor at rate LE 17.15/hr. (5 marks)

Question 3: (25 Marks)

Consider the following project,

Activity	Predecessor	Duration (days)	Resources required	
			Plumbers	Labors
A	-	4	2	3
B	-	3	1	-
C	-	6	1	3
D	B	8	3	4
E	B	7	-	1
F	C	2	3	5
G	A, D	9	1	2
H	E	5	2	4
I	E	4	-	2
J	F, I	4	2	3



Faculty of Engineering

Department : Structural Engineering
Lecturer : Dr. Emad Elbeltagi
Course : Construction Project Management
Course Code : 08315
Total Marks : 110
Date : 15 Jan 2012

Class : 3rd Civil
Time allowed : 3 hours

Final Exam

Question 1: (22 Marks)

a. Select the right answer:

(5 marks).

1. Site selection and financing (اختيار وتمويل المشروع) would be the responsibility (مسئولية) of which project member.
a. Owner
b. Designer
c. Construction project manager
d. Subcontractor
2. This Category of projects is often funded by public pounds and is termed "infrastructure".
a. Residential
b. Commercial building
c. Heavy engineering
d. Industrial
3. Which of the following is not a characteristic of a project?
a. Having a specific goal
b. Having a defined beginning and end
c. Resources being consumed
d. usually being performed only once
e. Never being found outside the construction field
4. The advertising for contractors and review of contractors' bids occurs during which project phase.
a. Procurement
b. Design
c. Construction
d. Conceptual planning
5. As-built drawings, warranties (الضمانات), and operation manuals are all provided to the owner during which project phase.
a. Design
b. Conceptual planning
c. Construction
d. Project closeout

b. Complete the following sentences:

(17 marks)

- 1- Construction Management concerns (تختص بـ) with controlling:, & of construction.
- 2- Turn-Key projects are generally more risky (أكثر خطورة) to the
- 3- Typical and well-defined (المعرفة جيدا) projects are often constructed based on type of contracts.
- 4- A drawback (أحد عيوب) of a "cost plus a fixed-fee" contract is that
- 5- Main characteristics (الخصائص الرئيسية) of a project are:, and
- 6- Construction projects are classified (تصنف) based on:, and
7. Free float is defined as
8. Contract price (سعر العقد) = +
9. Contracts are classified based on, and divided into contracts & contracts