

# ASSIGNMENT / QUIZ

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Subject : Construction Management

Section : "B"

Program : BE(C)

Exam : Mid Paper

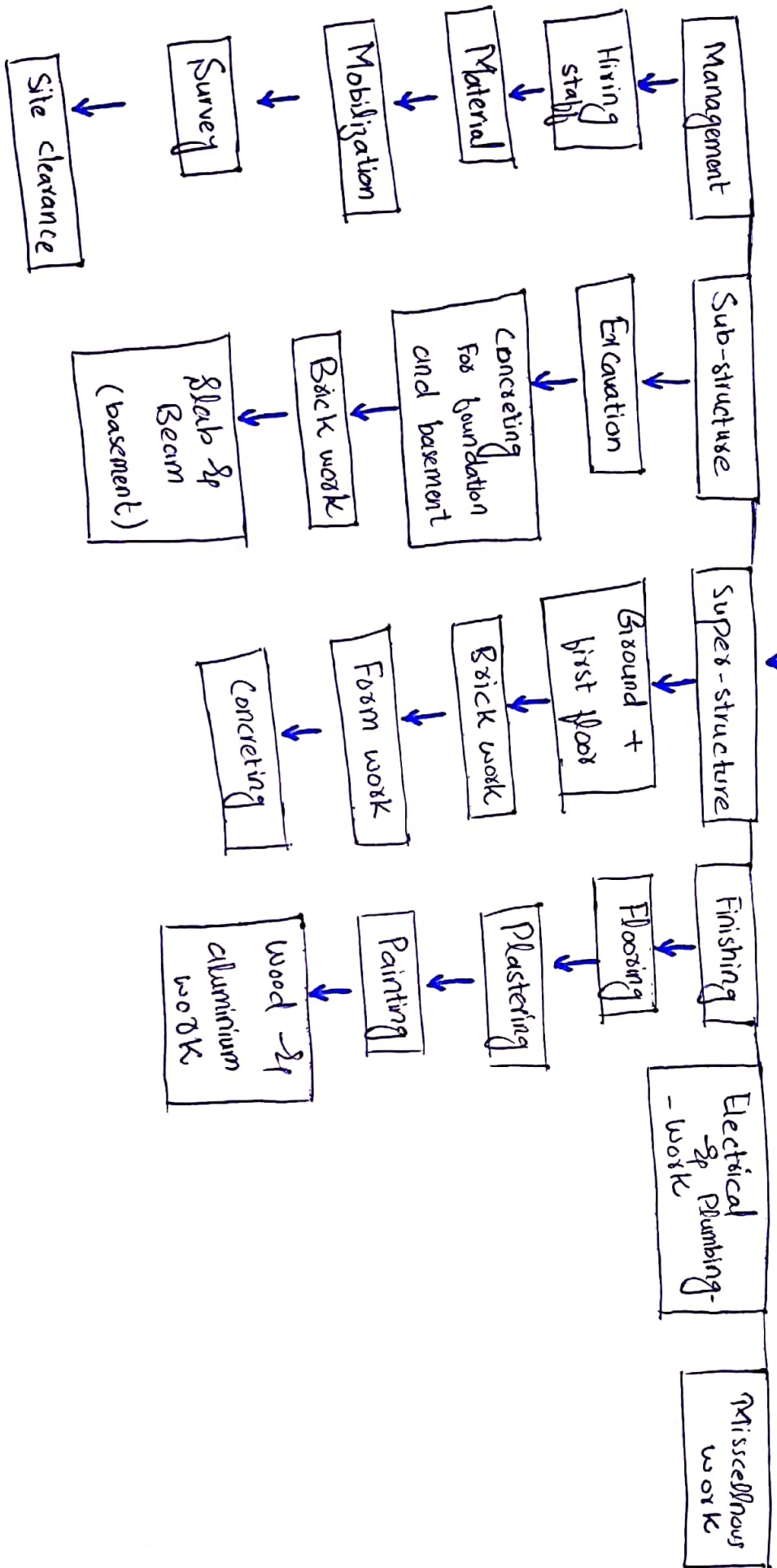
Submitted To : Engr. Dr. M. Zeeshan Ahad

# QUESTION#01

(a): ACTIVITY LIST:-

- Survey.
- Mobilization.
- Grabbing of site.
- Layout and excavation.
- Foundation and columns.
- Block masonry wall.
- Form work.
- concreting (beams & slab).
- Curing.
- flooring.
- Wood work.
- Plumbing and sanitary work.
- Electrification
- Finishing & Miscellaneous.

# Work Breakdown Structure of a Building:



# Q No # 02: Timeline of the building

Project:

→ Construction of 2-kanal house;

Project start : 20 Apr, 2020 Project end: 27 Nov, 2020.

Activity	Start date	Duration	End date
Initial survey	20 Apr	2	22 Apr
Mobilization	22 Apr	3	25 Apr
clearance and grubbing	25 Apr	2	27 Apr
detailed survey	27 Apr	2	29 Apr
Payout	1 May	3	4 May
Excavation	4 May	1	4 May
leveling & dressing	5 May	1	5 May
anti-termite	5 May	1	5 May
<b>FOUNDATION &amp; BASEMENT</b>			
lean concrete	6 May	1	7 May
Steel rebar for column foundation	7 May	2	9 May
form work	9 May	3	12 May
Concrete 1:2:4 foundation column	10 May	3	13 May
Steel rebar for column	12 May	7	19 May
Column formwork basement	13 May	7	20 May
Column concreting basement	14 May	7	21 May
formwork for beams & slabs	19 May	10	29 May
Steel cutting and placing	29 May	5	3 Jun
Electrical pipe distribution	3 Jun	2	5 Jun
Concrete 1:2:4 slab & beams	5 Jun	1	6 Jun
form removal	29 Jun	4	3 July

Contd:

brick masonry	4 July	30	3 Aug
electrical & plumbing pipes dist.	3 Aug	10	13 Aug
plastering	3 Aug	20	23 Aug
curving	13 May	110	31 Aug
ceiling	31 Aug	10	10 sep
painting	21 May	20	20 sep
Sanitation work	10 Aug	5	15 sep
floor concreting	20 Aug	7	27 sep
tiles and marbles	27 sep	15	12 oct
wood works	27 sep	30	27 oct
electrical wire distribution	27 sep	5	2 oct
Sanitary fixtures	12 oct	3	15 oct
<b>GROUND FLOOR</b>			
Layout	6 Jun	1	7 Jun
Steel cutting & placing for column	7 Jun	2	9 Jun
formwork	9 Jun	5	14 Jun
Concreting for column	10 Jun	6	16 Jun
formwork for beams & slabs	16 Jun	10	26 Jun
Steel cutting and placing	26 Jun	7	3 July
Electrical pipes distribution	3 July	2	5 July
concrete 1:2:4 slab & beams	5 July	1	6 July
form removal	3 Aug	2	5 Aug
brick masonry	5 Aug	15	20 Aug
electrical and plumbing pipes	20 Jun	5	25 Aug
plastering	25 Sep	15	9 sep
curving	10 Sep	90	8 Sep
ceiling	8 sep	5	13 Sep
painting	13 sep	15	28 sep

Contd...

Sanitation work	8 sep	3	11 sep
floor concreting	11 sep	3	14 sep
tiles and marbles	14 sep	15	29 sep
wood works	29 sep	20	19 oct
electrical wire distribution	28 sep	5	3 oct
sanitary fixtures	29 sep	5	4 oct
<b>FIRST FLOOR</b>			
Layout	6 July	1	7 July
Steel cutting and placing	7 July	5	12 July
formwork	8 July	7	15 July
concreting for column	8 July	7	15 July
formwork for beams & slabs	15 July	7	25 July
steel cutting & placing	25 July	10	1 Aug
Electrical pipes distribution	1 Aug	7	3 Aug
concrete 1:2:4 slab & beams	3 Aug	2	4 Aug
form removal	1 sep	1	3 sep
brick masonry	3 sep	2	13 sep
electrical & plumbing pipes	13 sep	10	18 sep
plastering	18 sep	5	3 oct
Cusing	8 July	15	6 oct
ceiling	3 oct	90	10 oct
painting	10 oct	7	25 oct
Sanitation work	3 oct	15	8 oct
floor concrete	8 oct	5	13 oct
Tiles & marbles	13 oct	5	2 Nov
wood works	2 Nov	20	22 Nov
electrical wire dist.	25 oct	20	30 oct
Sanitary fixtures	22 Nov	5	27 Nov



Contd.

## MUMIY AND TERRACE

Layout	4 Aug	1	5 Aug
Steel cutting and placing	5 Aug	1	6 Aug
form work	6 Aug	1	7 Aug
concreting for column	7 Aug	1	8 Aug
formwork for beams & slab	8 Aug	1	9 Aug
Electrical pipes distribution	10 Aug	1	11 Aug
Steel cutting & placing	19 Aug	1	10 Aug
Concrete 1:2:4 slab and beams	11 Aug	1	12 Aug
form removal	9 sep	1	10 sep
brick masonry	10 sep	3	13 sep
electrical & plumbing pipes	13 sep	1	14 sep
plastering	14 sep	3	17 sep
Curing	7 Aug	45	21 Sep
Painting	17 sep	3	20 Sep
Parapet wall	5 Aug	10	15 Aug
bitumen	15 Aug	1	16 Aug
mud on roof	16 Aug	3	19 Aug
chowka placing	19 Aug	5	24 Aug

## EXTERIOR WORKS AND BOUNDARY WALL

Layout	26 Apr	2	28 Apr
Excavation	28 Apr	7	5 May
Leveling and dressing	5 May	2	7 May
anti-termite	7 May	1	8 May
lean concrete	8 May	3	11 May
brick masonry	11 May	4	25 May
dpc	25 May	2	27 May
brick masonry	27 May	21	17 Jun
painting	20 sep	15	5 Oct

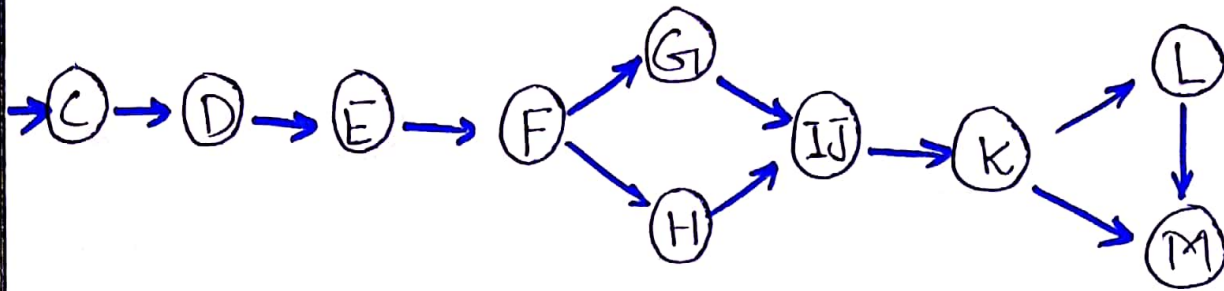
## (c) Critical path Method (CPM):-

Activity		Predecessor	Duration in weeks
Survey	A		1
Mobilization	B		1
Grubbing of site	C	A	1
Layout & excavation	D	C	2
Form work	E	D	4
Foundation & column	F	E	3
Concreting (beam & slab)	G	F	3
Brick work	H	F	3
Plumbing & sanitary work	I	G, H	2
Electrification	J	G, H	2
Finishing	K	I, J	3
Flooring	L	K	2
Wood work	M	K, L	3
Miscellaneous work	N		3



# Precedence Diagram:

Ⓐ



There are one other part;

Ⓑ



So, there are two parts of project path Ⓐ and Ⓑ

Path Ⓐ → (ACDEFGHIJKLM) having 26 weeks.

Path Ⓑ → (ACDEFGHIJKM) having 24 weeks.

So the critical path of our project is path A has more time.

(d) Provide Maximum time taken by Project:

D	A	1	1	1	1	1	1
1	1	C	2	2	2	2	2
2	2	D	4	4	4	4	4
4	4	E	8	8	8	8	8
8	8	F	11	11	11	11	11
11	11	G	14	14	14	14	14
14	14	H	14	14	14	14	14
14	14	I	18	18	18	18	18
18	18	K	24	24	24	24	24
24	24	L	23	23	23	23	23
23	23	M	26	26	26	26	26

→ As according to forward pass and backward pass the maximum time for our project is 26 weeks.

(E): Provide which activity here the Slack time;

$$\text{Slack} = \text{late finish} - \text{early finish}$$

$$A = 1 - 1 = 0$$

$$C = 2 - 2 = 0$$

$$D = 4 - 4 = 0$$

$$E = 8 - 8 = 0 \text{ and so on all values}$$

Comes zero so no slack.

$$\text{Slack} = \text{late start} - \text{early start}$$

$$A = 0 - 0 = 0$$

$$C = 1 - 1 = 0$$

$$D = 2 - 2 = 0$$

$$E = 4 - 4 = 0$$

★ so on all values comes, so no slack.