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B. Tech 4th Semester (Civil) Examination,

May-2016

CONSTRUCTION & CONCRETE TECHNOLOGY

Paper-CE-210 F

Time allowed : 3 hours]

[Maximum marks : 100

Note : • Question number 1 is compulsory.

- Students have to attempt five questions in total at least one question from each section.
- Assume any data if missing.

1. (a) Define network analysis with example. 4
(b) Define the term concrete. Also write down any four properties of harden concrete. 4
(c) Write down the factors affecting the choice of mix design. 4
(d) Write down the name of equipments used for heavy construction, explain any two. 4
(e) What do you understand by prestressed concrete ? Explain briefly along with its types. 4

Section-A

2. Draw the network and calculate the following : 20
(a) Earliest start time.

(2)

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- (b) Earliest finish time.
 (c) Latest start time.
 (d) Latest finish time.
 (e) Total float.
 (f) Free float.

Activity	pre	Successor	Duration
A	—	D	4
B	—	E	5
C	—	F	6
D	A	G	3
E	B	H	4
F	C	I	5
G	D	—	8
H	E	—	9
I	F	—	10

3. Draw the network and calculate : 20
- (a) Earliest event time.
 (b) Latest occurrence time.
 (c) Slack if project duration is 29 days and hence determine the critical path.

Activity	pre	Successor	t_e	t_l	t_f
A	—	D	2	4	6
B	—	E	3	5	7
C	—	F	4	6	8
D	A	G	1	3	5
E	B	H	3	4	5
F	C	I	4	5	6
G	D	—	6	8	10
H	E	—	8	9	10
I	F	—	7	10	13

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Section-B

4. Write down the test used for measuring the workability of fresh concrete explain any two in detail with neat and clean diagram. Also compare the relative merits and demerits of various workability tests. 20
5. What are the factors effecting the prestressing of concrete ? Explain in detail. 20

Section-C

6. Explain the principles of concrete mix design. What are the various factors governing the selection of mix proportion according to Indian standard. 20
7. Write down the step by step procedure for mix design recommended by British standard. Also mention the code name. 20

Section-D

8. What do you understand by the term heavy construction ? Also explain the precautions take care during the construction of a dam in detail. 20
9. What type of equipment is used for placing concrete ? In what way does this equipment avoid segregation during placing ? Explain in detail. 20