Mid-West University

Examinations Management Office

End Semester Examinations-2080

Master level/ M. Sc. (Structural Engineering)/ 2nd Semester | Full Marks: 60
Time: 3 hours | Pass Marks: 30
Subject: Advanced Concrete Technology (STR523/MSTR508)

- *Attempt all the questions.*
- *Figures in the margin indicate full marks.*
- *Assume suitable values, with a stipulation, if necessary.*
- *Candidates are required to answer the questions in their own words as far as possible.*

1. 'In modern construction development and use of special types of concrete is increase' Justify your opinion in this regard. Explain the RMC concrete with their application fields, constituents, advantages and disadvantages. **[10]**

2. Explain the influence of grading of aggregate on the properties of concrete? Discuss the reason why grading limits are specified. **[7]**

3. In construction industry of Nepal safety issues are not followed Properly. If you have responsibility on safety management Engineering, how are you fulfilling the various lagging on safety management and what is the suggestion to concern authority? **[8]**

4. What are the Requirement of Concrete Mix Design? Compute the design mix of Hydropower house with following designation by using IS: 10262:2009 and IS 456:2000 **[10]**

Type of Concrete: RCC	Sp. Gravity of Fine Aggregate: 2.67
Grade of Concrete: M30	Sp. Gravity of Coarse Aggregate: 2.74
Shape of partials: Angular	Sp. Gravity of Cement: 3.15
Slum required: 75mm	Water absorption of Fine Aggregate=2%
Exposure condition: Moderate	Water absorption of coarse Aggregate=0.5%
Fine Aggregate: Zone I	Free Surface Moisture of Fine Aggregate=0%
Coarse Aggregate: 40mm	Free Surface Moisture of Coarse Aggregate=0%

5. Explain the Destructive and non-destructive test on concrete. And how to conduct rebound hummer test of concrete on Field with examples. **[8]**

6. How Fresh properties of concrete depend on concrete Rheology? Explain Various types of rheometers. Why mixing, pouring and curing of concrete is important? Explain what are the factor impact on concrete harden properties. **[2+3+3+2]**

7. Explain important of the quality control and quality assurance in construction. Draw the flowchart of total quality management in construction industry. **[7]**

The End