



FACULTY OF ENGINEERING
DEPARTMENT OF CIVIL AND ENVIRONMENTAL

HOD'S SIGNATURE

Course Title: Civil Engineering Material Course Code: CVE307

Session: 2020/21 Semester: First Level: 300

Instructions: Attempt Four Questions, Time: 2 hrs 30 mins

- Que. 1a. i.** Write short note on Concrete. **3 mks**
- ii.** Mention five types of cement. **5 mks**
- iii.** List four chemical compounds that is present in Portland cement. **4 mks**
- iv.** Enumerate the physical properties should be checked before selecting a portland cement for the civil engineering works. **3 mks**
- Que.2. i.** Briefly explain the term "Aggregate" **4 mks**
- ii.** Define the term Fineness modulus and its usefulness **3 mks**
- iii.** Which information can be obtained from Grain size distribution? **3 mks**
- iv.** Mention two methods that are generally used for measuring Grain size distribution. **2 mks**
- 2b.** Explain the three primary uses of aggregate in highway construction. **3 mks**
- Que. 3a. i.** What do you understand by Concrete mix design? **2 mks**
- ii.** Mention the index properties of hardened concrete and the factors it depends on. **6 mks**
- 3b.** What are the requirements which form the basis of selection and proportioning of mix ingredients in concrete mix design? **4 mks**
- 3c.** List three types of concrete mixes. **3 mks**
- Que. 4a.** Explain the effect of heat treatment and welding on the production and usage of steel products. **6 mks**
- 4b. i.** What do you understand by the corrosion of steel? **3 mks**
- ii.** How do you prevent corrosion of steel? **3 mks**
- iii.** Explain in brief which tests and quality control can be conducted on steel. **3 mks**
- Que.5a.** Itemize factors that are considered for the classification of timbers. **5 mks**
- b.** State the difference between soft wood and hard wood **5 mks**
- c.** With a neat sketch, briefly explain Air seasoning. **5 mks**
- Que.6a.** Give five comparisons between Bitumen and Tar. **5 mks**
- 6b.** List five tests that can be conducted on bitumen. **5 mks**
- 6c.** State five uses of Asbestors **5 mks**