

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2024**

CONCRETE TECHNOLOGY

Use of IS 10262:2019 shall be permitted in the examination hall

[Maximum Marks : 75]

[Time : 3 hours]

PART-A

I. Answer all the following questions in one word or sentence. Each question carries 1 mark.

(9x1=9 marks)

		Module Outcome	Cognitive level
1	Le Chatelier's apparatus is used to determine.....of cement.	M1.02	R
2	The pH of water used for concreting shall not be less than.....	M1.04	R
3cement is used where formwork has to be removed early and where high early strength is required.	M1.01	U
4	Ve Bee Degree is measured in.....	M2.02	R
5	Ability to withstand the damaging effects over a long time is called.....	M2.02	R
6	In the designation of M 55 concrete, 55 refers to.....	M3.01	R
7	Concrete achieves 99% of its strength in.....days.	M3.03	R
8	The process of inspecting, testing or evaluating materials, components or assemblies for discontinuities or differences in characteristics without destroying the serviceability of the part or system is called.....	M3.03	R
9	Admixtures that causes the development of a system of microscopic air bubbles in concrete are called	M4.01	R

PART B

II. Answer any Eight questions from the following. Each question carries 3 marks.

(8x3=24 marks)

		Module Outcome	Cognitive level
1	List six types of special cements.	M1.01	R
2	Identify the attachments used for determining the following properties of cement using a Vicat's apparatus (i) Standard Consistency (ii) Initial Setting Time (iii) Final Setting time	M1.02	U
3	Identify the grades corresponding to the given mix proportions (i) 1:3:6 (ii) 1:1.5:3 (iii) 1:2:4	M2.01	R
4	List three tests to determine workability of concrete.	M2.02	R
5	Identify the types of joints provided in concrete construction.	M2.04	R
6	List the basic data required for mix design.	M3.01	R
7	Explain advantages of waterproofing	M3.04	U
8	Identify three properties of geopolymer concrete.	M4.02	U
9	List three methods of placing concrete underwater.	M4.02	R
10	Differentiate between admixtures and additives with suitable examples.	M4.01	U

PART C

Answer **all** questions from the following. Each question carries 7 marks.

(6x7=42marks)

		Module Outcome	Cognitive level
III	Explain the procedure for determination of fineness of cement by the method of sieving. OR	M 1.02	U
IV	Explain the classification of aggregates according to size and shape.	M1.03	U
V	Explain the hydration reaction of cement. OR	M1.02	U
VI	Explain the procedure to determine compacting factor of concrete with a neat sketch.	M2.02	U
VII	Define workability of concrete and identify the factors affecting workability of concrete. OR	M2.02	U
VIII	Define curing. List the different methods of curing.	M2.03	U
IX	Explain the objectives of concrete mix design. OR	M3.01	U
X	List seven methods of concrete mix design.	M3.02	R
XI	Define hot weather concreting. Identify the problems in hot weather concreting and the precautions to be taken. OR	M4.04	U
XII	Discuss the precautions to be taken during concreting in marine environment.	M4.02	U
XIII	Define Rebound index and identify the factors affecting the rebound index. OR	M3.03	U
XIV	Explain the precautions to be considered in cold weather concreting.	M4.03	U
