B.Tech. (Civil Eng.) 8th Sem. G-Scheme

Examination, May - 2025

ESTIMATION, COSTING AND VALUATION

Paper - PCC-CE-402-G

Time allowed : 3 hours] *[Maximum marks : 75*

Before answering the questions, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : *Attempt **five** questions in all, slecting **one** question from each section. **Question No. 1 is compulsory.** All questions carries equal marks.*

1. Describe the following: 15

(a) Necessity of specification

(b) Purpose of estimation

(c) Muster roll

(d) Retention money

(e) Depreciation

Section - A

2. What do you mean by estimation? Also explain different types and method of estimation. 15

3. Estimate the quantities of the following items of a two roomed building:

   (i) Excavation

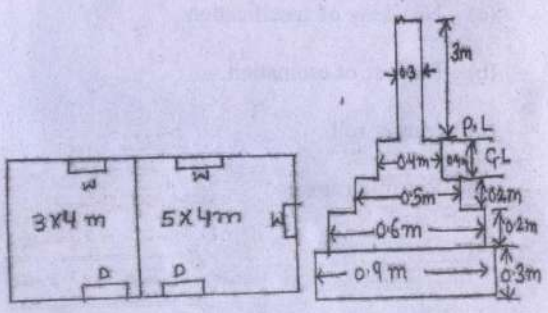
   (ii) Cement concrete in foundation

   (iii) Brick work

   (iv) Flooring 100 mm

   (v) D. P. C. 50 mm

   (vi) Door (1.1 × 2.1) and windows (1.2 × 1.4) 15



Section - B

4. (a) Explain the specification for different class of brick. 7

   (b) Explain the detail specification for cement plastering and finishing. 8

5. Differentiate between stock and tools used in construction. 15

Section - C

6. Analysis of rate for 150 mm thick RCC slab in 1:1.5:3 M20 ratio of slab 10 m × 10 m. Workout the quantity of dry material, cost of material and cost of RCC work and labour. 15

7. Explain the process of preparation of final bill and also explain the procedure to maintain measurement book. 15

Section - D

8. What do you mean by contract. Explain in detail contract document. 15

9. What do you mean by mortgage lease and explain different types of mortgage lease. 15

B.Tech. (Civil Eng.) 8th Sem. G-Scheme

Examination, May - 2025

GEOTECHNOLOGY

Paper - PEC-CEEL-408-G

Time allowed : 3 hours] *[Maximum marks : 75*

Before answering the questions, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : *Attempt **five** questions in all, slecting **one** question from each section. **Question No. 1 is compulsory.** All questions carries equal marks.*

1. Describe the following: 15

(a) Factor of safety used in stability of slopes

(b) Necessity of machine foundation

(c) Dynamic compaction

(d) Degree of freedom in machine foundation

(e) Define soil stabilization.

Section - A

2. What are the different types of slopes? Describe the stability of finite slopes by method of slices. Also define stability number and its uses. 15

3. What do you mean by critical slip circle? Describe fellenius method to locate the center of most critical slip circle. 15

Section - B

4. Explain different type of sheeting and bracing system. Describe the component of sheeting and bracing system. 15

5. What is coffer dam. Explain different type of coffer dam with their advantage and disadvantage. 15

Section - C

6. Derive an expression of depth of embedment of cantilever sheet pile in cohesionless soil. 15

7. An excavation 8 m deep is to be made in cohesionless soil having $y = 16\ kN/m^3\ \Phi = 35^0$, Determine the

minimum depth of embendment for equilibrium. The anchor and water table are at a depth of 2.5 m and 3 m below the ground surface. Assume free earth support conditions. 15

Section - D

8. Explain the pre compression, mechanical stabilization and reinforce earth in detail. 15

9. (a) Describe the characteristics elements of a vibratory system. 8

   (b) Define natural frequency for machine foundation. Analyze Barken's method for determining natural frequency of a block foundation subjected to oscillation. 7

B.Tech. 8th Sem. (Civil Engg.)
(G-Scheme) Examination, May-2025
STRUCTURAL DYNAMICS
Paper - PEC-CEEl-414-G

Time allowed : 3 hours] *[Maximum marks : 75*

Before answering the questions. Candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regared, will be entertained after examination.

Note : *Attempt **five** questions in all, selecting **one** question from each section. **Question no. 1 is compulsory.** All questions carry equal marks.*

1. Describe the following: 15

(a) Eigen value

(b) Magnification factor

(c) Natural frequency

(d) Degree of freedom

(e) Energy principle

Section-A

2. (a) Differentiate between static loading and dynamic loading. 8

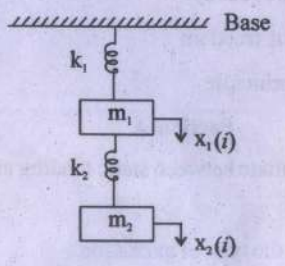
(b) Explain the type of excitation. 7

3. Explain the principle and working of piezoelectric transducers. Derive the equation for a free vibration of viscous damping of single degree freedom system. 15

Section-B

4. Derive the equation of motion for damped force vibrations with constant harmonic excitation of a single degree freedom system. 15

5. Find the natural frequencies of the system shown in figure, with m1 = m2 = m3 = 2m, k1 = k2 = k3 = 2k. Determine the response of the system when k=1000N/m, m 20 kg, and initial values of the displacement of the masses m1 and m2 are 1 and –1 respectively. 15



Section-C

6. What do you mean by decoupling of equations? Explain the concept of model Superposition. 15

7. Explain the lumped mass formulation of dynamic analysis of a based stiffness matrix. 15

Section-D

8. Explain in brief about the Rayleigh Ritz method of vibrational analysis. 15

9. Explain SRSS system and CQC combination of model response. 15

3713

B.Tech. (Civil Engineering) 8th Semester, G-Scheme

Examination, May - 2025

SOLID AND HAZARDOUS WASTE MANAGEMENT

Paper - OEC-CE-416G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : ***Question No. 1. is compulsory.*** *Attempt* ***one*** *question from each section. All questions carry equal marks. Assume missing data, if any suitably.*

1. (a) Define biodegradable and non-biodegradable waste. $6 \times 2.5=15$

(b) What are the methods used to measure solid waste quantity?

(c) Define "Float and sink separation" in waste management.

(d) Define leachate in the context of landfills.

(e) How is hazardous waste classified?

(f) What are the key factors affecting biological treatment?

Section - A

2. (a) Explain the different sources and types of municipal solid waste with examples. 8

   (b) What are the key challenges in determining the composition of municipal solid waste? 7

3. (a) How are materials recovered from MSW? Discuss the methods used. 8

   (b) Explain the significance moisture content, calorific value, and density in MSW management. 7

Section - B

4. (a) How do commercial and industrial sites differ in their approaches to waste handling and material separation compared to residential areas? 8

   (b) What are the latest technological advancements in soild waste separation and processing? 7

5. (a) Discuss the environmental impact and mitigation strategies for landfill waste disposal . 8

   (b) Explain different types of landfills and their design considerations. 7

Section - C

6. (a) What are the environmental legislations governing hazardous waste management? 8

   (b) How is hazardous solid waste identified and classified and what criteria are typically used in this process? 7

7. (a) Compare oxidative and reductive processes in solid waste treatment. 8

   (b) Explain the composting process and its significance in waste management? 7

Section - D

8. (a) Discuss the methods of radioactive waste disposal and thier environmental impact. 8

   (b) Explain the role of nuclear power plants in radioactive waste generation. 7

9. (a) Discuss the sources, composition and environmental impact of e-waste. 8

(b) How is e-waste managed at different stages of its lifecycle. 7