



Bharatiya Vidya Bhavan's

# SARDAR PATEL COLLEGE OF ENGINEERING

(Government Aided Autonomous Institute)  
Munshi Nagar, Andheri (W) Mumbai - 400058



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**END SEM/RE-EXAM EXAMINATION DEC/JAN 2024-25**

Program: M. Tech

Course Code: VE-MTSE303; VE-MTCM303

Course Name: Safety in Construction

Notes: Answer any Five out of Seven questions

21/2/24  
Duration: 3 Hours

Maximum Points: 100

Semester: III

Q.No.	Questions	Points	CO	BL	Module No.
1	1.1 Explain any ten of these safety terms: Incident, Accident, Hazard, Risk, Lost time Incident, Fatality, Medical treatment case, First aid case, Near Miss, Restricted work Case, HSE objective, Zero mindset	10	1	1	1
	1.2 Explain Occupational Health and Safety in the Construction Industry.	10	1	2	1
2	2.1 What is the purpose of an Incident investigation?	8	3	3	4
	2.2 Explain the six steps of an Incident Investigation Process	12	3	4	4
3	3.1 Explain 'control measures' to protect workers in construction. What is Hierarchy of controls? List the five levels of hierarchy in the order of their effectiveness.	10	2	2	2
	3.2 Explain how each of the five levels of Hierarchy of controls can be used giving an example of each.	10	2	4	3
4	4.1 What are the different injuries that workers are exposed to because of electrical hazards? What is the difference between Electrocutation and Electric shock?	8	1	2	7
	4.2 Explain any five of the seven common examples of Electrical Hazards at a construction site.	12	1	3	7
5	5.1 What is safety Promotion? How is it achieved?	8	2	2	5
	5.2 Write brief notes on the six components for promoting Safety in a construction Company?	12	4	1	6



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Q.No.	Questions	Points	CO	BL	Module No.
6	6.1 Write a note on Personal Protective Equipment giving examples of PPE.	8	2	2	4
	6.2 What are employers and employees responsibilities for PPE. How are PPE for construction workers classified?	12	4	3	4
7	7.1 Explain the four fall prevention measures to protect workers from Fall Hazards.	10	2	3	6
	7.2 List out the key points of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.	10	4	2	3
	End of Question Paper				



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21/12/24  
21/12/24

END-SEM/RE-EXAM EXAMINATION DEC2024/JAN2025

Program: S. Y. M. Tech. (SE/CM/PEPS) *Sumit*  
Course Code: VE-MTCM302/VE-MTSE302/VE-MTPX303/  
Course Name: Intro. to Sustainability & Sustainable Development

Duration: 3 Hrs  
Maximum Points: 100  
Semester: III

- Question 1 is compulsory. Solve any 4 of remaining 6 questions
- Draw **neat sketches/diagrams** wherever required
- Assume **suitable data** if necessary and state them clearly
- Figure on right indicate **maximum points** for the given question, **course outcomes attained and Bloom's Level**

Q. No.	Questions	Points	CO	BL
1	<b>Answer the following questions (solve any 4 of 5)</b>	5 points for each	1-3	1-2
	(a) Explain in short: GRI standards and SDG index and their use.			
	(b) Explain Replacement Rate and Carrying Capacity with example.			
	(c) Discuss the role of an engineer in contributing towards UNSDG 2.			
	(d) Explain Greenhouse gas emissions and Global Warming Potential.			
2.	(e) Explain with examples a positive feedback loop with respect to climate change.	10	1-3	1-2
	(a) Explain the concept of sustainability in detail.	10		
3.	(b) Explain the concept of Limits to Growth with regards to sustainability.	05	2	1-2
	(a) Differentiate sustainable and renewable energy. Explain the difference with an example.	10	2-3	1-2
4.	(b) Enlist environmental impact categories with respect to LCA. Explain steps of LCA.	05	1-2	1
	(c) Define the concepts of carbon credits and carbon trading. Discuss how mechanisms like Joint Implementation (JI) and the Clean Development Mechanism (CDM) have facilitated international collaboration in reducing emissions.	5	2-3	2
	(a) Discuss waste management strategies that can contribute towards sustainability.	10	3-4	2
5.	(b) Enlist tools to measure sustainability. Explain any three which you find most appropriate for measurement.	5	3-4	2
	(c) Illustrate with a neat sketch, the life cycle of any food item and discuss briefly what post-production measures can contribute to sustainable practices.	10	3-4	3
	(a) Explain the concept of green building and how is it beneficial. Explain any standard available to certify green building.			

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	(b)	Discuss concept of social sustainability and various factors which affect it.	10	2-3	3
6.	(a)	Explain how you would treat water pollution.	5	2-4	3
	(b)	Explain resource depletion as one of the major issues related to sustainability.	5	2-4	3
	(c)	Economic sustainability is a must to achieve UNSDGs. Explain with reference to context.	10	2-4	3
7.	(a)	Explain typical factors contributing towards sustainable design.	5	1-2	1
	(b)	Explain the concept of net zero energy building and how is it different from a green building.	5	1-2	1
	(c)	Explain the United Nations Sustainable Development Goals (UNSDGs) and their relevance to global development. Discuss the role of NITI Aayog in monitoring the progress of SDGs in India, including the significance of the SDG Index.	5	2-3	3
	(d)	Discuss the role of an engineer in contributing towards UNSDG 6.	5	1-3	2