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BTECH
(SEM V) THEORY EXAMINATION 2023-24
ENGINEERING GEOLOGY

TIME: 3 HRS

M.MARKS: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 10 = 20

Q no.	Question	Marks	CO
a.	Define one significant geological hazard.	2	1
b.	Name two branches of geology that are particularly relevant to civil engineering.	2	1
c.	Explain Stratification, Lamination bedding of rocks.	2	2
d.	Define structure and texture.	2	2
e.	What do you understand by term Grouting?	2	3
f.	What is Alkali aggregate reaction?	2	3
g.	Define seismic zones of India.	2	4
h.	Explain preventive measures of landslides.	2	4
i.	Explain underground water origin.	2	5
j.	Define Aquifer & Aquiclude.	2	5

SECTION B

2. Attempt any three of the following:

10x3=30

a.	Explain the significance of geological studies in civil engineering projects.	10	1
b.	Classify igneous, sedimentary, and metamorphic rocks.	10	2
c.	Define the alkali-aggregate reaction and its implications in civil engineering projects	10	3
d.	Discuss how seismic activities affect the stability of structures and infrastructure in civil engineering.	10	4
e.	Differentiate between aquifer and aquiclude. Explain their roles in underground water systems.	10	5

SECTION C

3. Attempt any one part of the following:

10x1=10

a.	Discuss the physical properties of minerals and their relevance in civil engineering.	10	1
b.	Explain how SEM (Scanning Electron Microscopy) aids in the investigation of construction materials.	10	1

4. Attempt any one part of the following:

10x1=10

a.	Discuss the criteria used for selecting building stones in construction projects.	10	2
b.	Explain how geological structures, such as folds and faults, influence civil engineering projects.	10	2



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Roll No:

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5. Attempt any <i>one</i> part of the following:		10x1=10	
a.	Evaluate the role of pozzolonic materials in enhancing the properties of concrete.	10	3
b.	Elaborate on the engineering applications of specific rock-forming minerals.	10	3
6. Attempt any <i>one</i> part of the following:		10x1=10	
a.	Evaluate the preventive measures and mitigation strategies employed to minimize landslide risks in construction.	10	4
b.	Outline the seismic zones of India and their geological considerations.	10	4
7. Attempt any <i>one</i> part of the following:		10x1=10	
a.	Elaborate on the concept of artesian wells.	10	5
b.	Explain the geological considerations that engineers should assess when selecting sites for reservoirs, tunnels, bridges, and highways.	10	5

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