Code No: R05410110 **R05** **Set No. 2**

**IV B.Tech I Semester Examinations,November 2010**
**GROUND IMPROVEMENT TECHNIQUES**
**Civil Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Define the terms 'free swell', 'differential free swell', 'swell pressure', 'field moisture content' and 'equilibrium moisture content'.
   (b) What are the field conditions that generally favour swelling in an expansive soil? Discuss. [8+8]
2. (a) Explain the methods and proportioning techniques of mechanical soil stabilization.
   (b) How the moisture content affect the compaction in the field? Discuss in detail. [8+8]
3. Explain the Concept of Reinforced Earth. Mention various reinforcing materials that can be used in soils. What are their merits and demerits? [16]
4. (a) What are the reactions and physical changes that take place in soil-lime stabilization? Discuss.
   (b) Discuss on suitability and application of lime stabilization. [8+8]
5. (a) Suggest suitable methods for densifying thick deposits of loose sand in saturated state. Explain any one method in detail.
   (b) Distinguish between Methods of Impact at Ground Surface and at Depth used in densification of granular soil deposits. [8+8]
6. (a) How does a Geogrid differs from a Geotextile?
   (b) Explain Separation and Filtration Functions of geotextile. Mention applications based on these Functions. [6+10]
7. (a) What design criteria are normally followed for soil-cement mixes? Discuss in detail.
   (b) What is the cement content needed for different types of soils? Explain. [8+8]
8. (a) What is the effect of vertical drains on Primary and Secondary Consolidation of soils? Name different vertical drains.
   (b) Write short note on densification of cohesive soils by Lime Columns. [8+8]

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Code No: R05410110 **R05** **Set No. 4**

**IV B.Tech I Semester Examinations,November 2010**
**GROUND IMPROVEMENT TECHNIQUES**
**Civil Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) How does a Geogrid differs from a Geotextile?
   (b) Explain Separation and Filtration Functions of geotextile. Mention applications based on these Functions. [6+10]
2. Explain the Concept of Reinforced Earth. Mention various reinforcing materials that can be used in soils. What are their merits and demerits? [16]
3. (a) Explain the methods and proportioning techniques of mechanical soil stabilization.
   (b) How the moisture content affect the compaction in the field? Discuss in detail. [8+8]
4. (a) What design criteria are normally followed for soil-cement mixes? Discuss in detail.
   (b) What is the cement content needed for different types of soils? Explain. [8+8]
5. (a) What is the effect of vertical drains on Primary and Secondary Consolidation of soils? Name different vertical drains.
   (b) Write short note on densification of cohesive soils by Lime Columns. [8+8]
6. (a) What are the reactions and physical changes that take place in soil-lime stabilization? Discuss.
   (b) Discuss on suitability and application of lime stabilization. [8+8]
7. (a) Define the terms ‘free swell’, ‘differential free swell’, ‘swell pressure’, ‘field moisture content’ and ‘equilibrium moisture content’.
   (b) What are the field conditions that generally favour swelling in an expansive soil? Discuss. [8+8]
8. (a) Suggest suitable methods for densifying thick deposits of loose sand in saturated state. Explain any one method in detail.
   (b) Distinguish between Methods of Impact at Ground Surface and at Depth used in densification of granular soil deposits. [8+8]

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Code No: R05410110 **R05** **Set No. 1**

**IV B.Tech I Semester Examinations,November 2010**
**GROUND IMPROVEMENT TECHNIQUES**
**Civil Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) What design criteria are normally followed for soil-cement mixes? Discuss in detail.
   (b) What is the cement content needed for different types of soils? Explain. [8+8]
2. (a) Suggest suitable methods for densifying thick deposits of loose sand in saturated state. Explain any one method in detail.
   (b) Distinguish between Methods of Impact at Ground Surface and at Depth used in densification of granular soil deposits. [8+8]
3. (a) Explain the methods and proportioning techniques of mechanical soil stabilization.
   (b) How the moisture content affect the compaction in the field? Discuss in detail. [8+8]
4. (a) How does a Geogrid differs from a Geotextile?
   (b) Explain Separation and Filtration Functions of geotextile. Mention applications based on these Functions. [6+10]
5. (a) What are the reactions and physical changes that take place in soil-lime stabilization? Discuss.
   (b) Discuss on suitability and application of lime stabilization. [8+8]
6. (a) Define the terms 'free swell', 'differential free swell', 'swell pressure', 'field moisture content' and 'equilibrium moisture content'.
   (b) What are the field conditions that generally favour swelling in an expansive soil? Discuss. [8+8]
7. Explain the Concept of Reinforced Earth. Mention various reinforcing materials that can be used in soils. What are their merits and demerits? [16]
8. (a) What is the effect of vertical drains on Primary and Secondary Consolidation of soils? Name different vertical drains.
   (b) Write short note on densification of cohesive soils by Lime Columns. [8+8]

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Code No: R05410110 **R05** **Set No. 3**

**IV B.Tech I Semester Examinations,November 2010**
**GROUND IMPROVEMENT TECHNIQUES**
**Civil Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Define the terms 'free swell', 'differential free swell', 'swell pressure', 'field moisture content' and 'equilibrium moisture content'.
   (b) What are the field conditions that generally favour swelling in an expansive soil? Discuss. [8+8]
2. (a) What is the effect of vertical drains on Primary and Secondary Consolidation of soils? Name different vertical drains.
   (b) Write short note on densification of cohesive soils by Lime Columns. [8+8]
3. Explain the Concept of Reinforced Earth. Mention various reinforcing materials that can be used in soils. What are their merits and demerits? [16]
4. (a) What are the reactions and physical changes that take place in soil-lime stabilization? Discuss.
   (b) Discuss on suitability and application of lime stabilization. [8+8]
5. (a) Suggest suitable methods for densifying thick deposits of loose sand in saturated state. Explain any one method in detail.
   (b) Distinguish between Methods of Impact at Ground Surface and at Depth used in densification of granular soil deposits. [8+8]
6. (a) Explain the methods and proportioning techniques of mechanical soil stabilization.
   (b) How the moisture content affect the compaction in the field? Discuss in detail. [8+8]
7. (a) How does a Geogrid differs from a Geotextile?
   (b) Explain Separation and Filtration Functions of geotextile. Mention applications based on these Functions. [6+10]
8. (a) What design criteria are normally followed for soil-cement mixes? Discuss in detail.
   (b) What is the cement content needed for different types of soils? Explain. [8+8]

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