Code No.807/2791/CBCS

FACULTY OF ENGINEERING

B.E. (Civil)(CBCS) VIII – Semester External Examination, Sept./Oct. 2020

Subject: Design with Geosynthetics

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. Define and Classify Geosynthetics.
2. Define "Design by function" adopted in respect of geosynthetics.
3. What are the different types of fibers used in the manufacture of geotextiles?
4. What are the applications of Geogrids?
5. Discuss about the Tensile strength property of geotextiles.
6. Write a short note on Creep test of the geotextiles.
7. What are the steps to be considered while installing Geogrids?
8. What are the issues to be considered related to endurance properties of geonets.
9. Define 'Geomembranes' and what are the most widely used polymers in its manufacturing?
10. What are "Gabions" and explain their use.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11. (a) Explain briefly about Geogrids.
    (b) Summarize the manufacturing of Genets with a neat sketch.

12. (a) What are 'Geo-composites'? Mention in detail about any two types of Geo-composites.
    (b) How to Design for separation using geosynthetics and What are the steps involved in its process.

13. (a) What is the Design procedure for a geogrid reinforcement of a paved road with a base course.
    (b) Discuss in detail about the environmental properties of geogrids.

14. (a) Discuss in detail about the thickness of the Geomembranes.
    (b) How to monitor Water Vapor Transmission in Geomembranes.

15. (a) Explain about the type of Geo composites which come under Permanent erosion control revegetation materials (PERMS).
    (b) What are the "Wick Drains"? What is the process involved in their installation?

16. (a) Draw neat sketch of a typical reinforced soil wall name the components and explain their functions.
    (b) How are Geo composites used in filtration.

17. Write a detailed note on the following
    (a) Pullout (Anchorage) test
    (b) Pre-fabricated vertical drains.

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Code No: 808/2792/CBCS

FACULTY OF ENGINEERING

B.E. VIII - Semester (CBCS)(Civil) (Main) Examination, September 2020

Subject: Ground Water Mgt. (E- IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. State Darcy's law and state its limitation.
2. List the various geophysical techniques for ground water exploration.
3. Comment about the Theis method of solution for an unsteady radial flow in a confined aquifer.
4. State the assumptions made in the derivation of basic differential equation of unsteady ground water flow in a confined aquifer.
5. Write and explain Ghyben Herzberg equation.
6. List out the sources for saline water in aquifers.
7. What are the non-aqueous phase liquids(NAPL's)?
8. List the different transport mechanisms of ground water contamination.
9. State the objective of ground water model studies?
10. Briefly explain concept of viscous fluid models?

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11 a) Discuss in detail about the vertical distribution of ground water with a sketch.
b) Explain with a sketch, the electrical resistivity method of surface geophysical exploration.

12 a) Derive an equation for a steady flow with a uniform recharge in an unconfined aquifer.
b) The draw downs measured in an observation well located at a distance of 110m from a pumped well are as given below. The well is in a confined aquifer and the uniform pumping rate from well is 1200m^3/day. Determine the aquifer parameters by Chow's method.

Time(days)	0.001	0.005	0.01	0.05	0.1	0.5	1.0	5.0	10.0
Drawdown(m)	0.09	0.2	0.275	0.4	0.45	0.57	0.65	0.77	0.88

13 a) Explain the various sources and nature of ground water pollution.
b) Explain the phenomenon of up coning of saline water with sketch.

14 a) Discuss the dispersion process of ground water contamination with figures.
b) Describe different classifications of ground water contamination?

15 a) What is an electric analog model? Explain in detail the conductive liquid model with a sketch.
b) With the help of sketches, explain the working of sand and membrane models.

16 a) Write about the ground water resources of India.
b) Explain the Cooper-Jacob's method of solution for unsteady flow in a confined aquifer.

17 a) Explain injection barrier method of controlling saline water intrusion.
b) Write about the thermal and hybrid computer models.

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Code No.809/2793/CBCS

FACULTY OF ENGINEERING

B.E. (Civil) VIII-Semester (Main) Examination, September 2020

Subject : Intelligent Transportation Systems (E-IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1 Define ITS.
2 Write the benefits of Intelligent Transportation System.
3 What are the significance of Sensor plan in ITS.
4 Mention the applications of ITS.
5 What are the objectives of ATMS?
6 Write the concept of ITS planning.
7 How Human factors affects ITS?
8 How Transportation Network operation is carried out?
9 What are the components of Electronic toll collection?
10 Define AVCS with its effects on ITS.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11 a) List the historical context of ITS from both public Policy & Market economic perspectives.
b) Explain briefly about ITS standards.

12 a) Write in detail about ITS organization & sources of information.
b) Discuss about Traffic flow sensors & Transponders in detail.

13 a) Describe a Typical sensor plan & its specific requirements.
b) Write in detail about the data collection using videos & AVI methods in ITS.

14 a) Differentiate between ATMS & APTS.
b) Write in detail about the uses of ITS operation & management in Transportation system.

15 a) How traffic sensing can be carried out by using intrussive and non-intrussive sensors?
b) Explain the various evaluation methods & models used in ITS Architecture planning.

16 a) Discuss in detail about various applications of ITS in Traffic & incident management system.
b) Write an overview on implementation of IRS in developing countries.

17 Write any Two of the following:
a) ITS and safety
b) AVI
c) ITS technology deployment.
d) Commercial vehicle operations.

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Code No: 845/2815/CBCS

FACULTY OF ENGINEERING

B.E. VIII-Semester (CBCS) (ECE) (Main) Examination, September 2020

Subject : Wireless Sensor Networks (E- III)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1 State the advantages of sensor Network.
2 Define node and draw PANS topology.
3 Explain the design issues of MCA protocol for Adhoc Wireless Networks?
4 Discuss the Gateway concept.
5 Where do we Geographic routing?
6 “Low duty cycle protocols” means interpret – with respect to WSN.
7 What is the goal for clustering in WSN?
8 Mention two issues in desismg a transport layer protocol.
9 List out operating systems for WSN.
10 What is the significance of security protocols in WSN?

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11 a) Define wireless sensor Networks and list out their application
b) Explain about optimization goals and Figure of merit

12 a) Explain the energy consumption of a sensor node
b) Discuss the significance of network architecture with neat diagram

13 a) Design a transceiver in WSN for any one application
b) Explain the importance of Low duty cycle MAC protocols in WSN

14 a) Explain about ToPology control and Time synchronization with respect to WSN
b) List out the programming challenges in WSN

15 a) Explain how the security provisioning in adhoc network differs from WSN which are infrastructure based networks
b) Discuss Any five security protocols for WSN

16 a) Illustrate the basics of table driver routing protocols for WSN
b) Explain about Energy - Aware routing protons

17 Write short note on
a) IEEE 802.15.4
b) WSN simulators

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Code No. 846/2816/CBCS

FACULTY OF ENGINEERING

B.E. (ECE) VIII – Semester (CBCS) (Main) Examination, September 2020

Subject: Global Navigational Satellite Systems
(Elective – IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. What is the GPS principle of operation?
2. Differentiate between Solar and Sidereal day.
3. Define C/A and P-Codes.
4. Differentiate between Spoofing and ani-spoofing.
5. What are the limitations of Differential GPS?
6. Differentiate between GBAS and SBAS.
7. Differentiate between GLONASS and Galileo?
8. What are the architectural features of BieDou-2?
9. List out various types of Regional Navigation Satellite Systems along with country names.
10. Explain about GPS / cellular integrations.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11. Define Keplerian law with neat sketches and explain about the GPS orbits.

12. Discuss in detail about various errors affecting the GPS accuracy and methods to overcome or minimize the errors.

13. (a) What are the relative advantages of MSAS and explain about it.
    (b) Explain the architecture of GAGAN with neat diagrams.

14. (a) Discuss the architecture and features of European GNS Systems.
    (b) Explain briefly about various civilian applications of BEIDUU-2.

15. Discuss in detail about GPS/GIS and GPS/INS integration applications.

16. Explain briefly about the need of various types of Global and Regional Navigation Satellite Systems and give their limitations.

17. Write short notes on:
    (a) GPS signal generation
    (b) GPS time reference

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Code No. 862/2836/CBCS

FACULTY OF ENGINEERING

B.E. (Mech./A.E.) VIII Sem. (CBCS) (Main) Examination, September 2020

Subject: Additive Manufacturing Tech. (Elective-IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. What is the need for additive manufacturing?
2. Give a short note on photo polymers.
3. Explain the usage of LOM tools.
4. What is meant by solid ground curing?
5. Name any two products that can be made through 3D printing.
6. List the specifications of SLS.
7. Explain the need for rapid tooling.
8. Write about RP newly proposed formats.
9. Mention RP applications in arts and architecture.
10. What is the consequence of building invalid tessellated model?

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11. a) Compare AM technology with CNC technology.
    b) Briefly explain the stereo lithography process with the neat sketch and the process parameters of SLA system that influence the part quality.

12. a) Explain with the neat sketch the working principle of LOM process.
    b) Name the materials used in fusion deposition modelling and state the advantages of this process.

13. a) Demonstrate the applications of SLS.
    b) In detail explain about process details and machine details of 3D printing.

14. a) Explain about any one ceramic tooling process.
    b) Classify rapid tooling methods and explain anyone briefly.

15. a) List various rapid prototyping data formats. Explain in detail.
    b) Explain the application of RP in Jewellery field.

16. a) Describe the generic steps in building a component in additive manufacturing.
    b) Explain any two translators used in place of STL.

17. a) Explain about STL file problems in detail with examples.
    b) What is the significant role of RP in design and production of medical devices?

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Code No. 863/2837/CBCS

FACULTY OF ENGINEERING

B.E. (Mech. / Prod.) VIII – Semester (CBCS) (Main) Examination, September 2020

Subject: Machine Tool Engineering and Design (Elective – IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. Give the classification of Machine Tools.
2. What are drives of machine tools?
3. What are the basic principles of design for strength?
4. What is the effect of shape factors on the rigidity of structures?
5. What are the materials used for spindles?
6. State the various shapes used for guide ways in machine tools.
7. What is the effect of vibration on machine tool?
8. State the methods for reducing the vibrations in machine tools.
9. State the difference between hydraulic and pneumatic circuits.
10. What are the various hydraulic controls used in machine tools?

PART – B

Note: Answer any four questions.

(4x15 = 60 Marks)

11. a) Explain in detail about automatic screw cutting machines.
    b) Explain in detail about the kinematic schemes of machine tools.

12. a) Explain in detail about design of lathe.
    b) Derive on equation on to find overall compliance of machine tool structure.

13. a) Explain in detail about design of spindles.
    b) Differentiate between hydrostatic and hydrodynamic bearings.

14. a) Explain in detail about machine tool chatter.
    b) Explain about vibration analysis of machine tool structures.

15. a) Explain in detail with neat diagrams about various positive displacement pumps.
    b) What are the different types of various valves used in hydraulic system.

16. a) How the spindle for milling machine is designed and sketch the arrangement?
    b) Explain about power screws.

17. Write short notes on the following:
    a) Stepped and stepless regulation.
    b) Hydro copying Systems
    c) Comply coefficient.

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Code No. 864/2838/CBCS

FACULTY OF ENGINEERING

B.E. (M/P/AE) VIII-Semester (CBCS) (Main) Examination, September 2020

Subject : Entrepreneurship Development (Elective – IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1 Who is an Intrapreneur?
2 Mention the advantages of Small scale industries.
3 List out the reasons for the industrial sickness.
4 What are the major problems faced by the women entrepreneurs?
5 Explain the significance of Techno-economic analysis in project formulation.
6 Briefly discuss about Human aspects in project management.
7 What are the opportunities available for entrepreneurs in India?
8 Differentiate between SME and MSME.
9 Define activity and critical path.
10 Write the major motives influencing entrepreneurs.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11 "Entrepreneurs are made or born"? Give your views. Explain and outline the development of an entrepreneur.

12 (a) Describe the objectives of SSI in India.
(b) What is District industrial centre? How it supports Small scale industries?

13 (a) Explain the various factors affecting entrepreneurial growth with suitable examples.
(b) What is project formulation? Explain the following terms in project formulation – financial analysis and Social cost- benefit analysis.

14 (a) Discuss the various steps involved in the PERT analysis.
(b) Mention the differences between PERT and CPM.

15 (a) Define a project. Explain various aspects of a project.
(b) What is demand analysis? Explain the significance of demand analysis for an entrepreneur.

16 (a) What is personality? How personality affects the behavior of an entrepreneur.
(b) Define Time management. What are the benefits of Time management?

17 Write short notes on:
(a) Tiny industries
(b) Choice of technology
(c) Personality attributes

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Code No. 875/2849/CBCS

FACULTY OF ENGINEERING

B.E. VIII Sem. (CBCS) (A.E) (Main) Examination, September 2020

Subject: Automotive Pollution & Control (E-IV)

Time: 2 hours **Max. Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. What is meant by global warming, how it is occurs?
2. Write the Comparison between Bharat Stage and Euro norms.
3. What are the different types of Emissions?
4. What is Crevice Volume? How its effects the engines design?
5. Define Photo Chemical Smog.
6. What is meant by Light off Temperature?
7. What are other type's Emission Control devices?
8. Give the function of Evaporative Emission control device.
9. What is meant by FTP? Write its purpose.
10. Mention the significance of CLA, FID.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11. a) Discuss the formation of various pollution and its effects on human health and environment.
    b) List the sources of atmospheric pollution from petrol engine powered vehicle.

12. a) Explain the effects on unburned hydrocarbons and carbon monoxide in S.I Engine.
    b) Define wall quenching

13. a) Explain the formation of pollutants from C.I.Engine.
    b) What are the factor affecting the smoke formation?

14. a) Explain with neat sketch the EGR system.
    b) What are the types of Crank Case Ventilation?

15. a) How the Orsat apparatus in determination of emissions? Explain with neat sketch.
    b) What is meant by IDC?

16. a) Explain about various regulated and unregulated emissions
    b) What are the types of fuel cell, write a short note on them.

17. Explain various design and operating variables which effects the emission of C.I Engine.

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