VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E./ B.TECH DEGREE EXAMINATIONS- APRIL -2022
CIVIL ENGINEERING
FIRST SEMESTER
CONSTRUCTION MATERIALS AND TECHNIQUES

Time : Three Hours   Maximum Marks:100 Marks

Answer **ALL** questions
Part-A (10 x 2 =20 Marks)

1   What are factors to in considered in surveying
2   What are the uses of cement?
3   What are the types of aggregates ?
4   What are the various defects in timber?
5   Write the types of timber and name some timber trees in India.
6   Define insulating materials.
7   What is the purpose of scoffolding?
8   What is the difference between in civil engineering & architecture ?
9   Give the important uses of glass?
10   Where the scoffolding are used?

Answer **Any FIVE** questions
Part-B (5 x10 =50 Marks)

11 a.   Explain different types of cement.
                                  OR
    b.   Explain any two types of test conducted on stones.

12 a.   How bricks are classified explain in detail ?
                                  OR
    b.   Write notes on types of Glass and its properties.

13 a.   What are the defects in timber? Explain it.
                                  OR
    b.   Explain the history of civil engineering.

14 a.   What is infrastructure? How does it relate with civil engineering?
                                  OR
    b.   Draw a neat sketch of a dam and label its parts. Mention the use of each component.

                                                                    (P.T.O)

15 a. Write short notes on a) Sulphate reistant cement b) Acid resistant cement c) Hydrophobic cement d) White cement.

OR

b. Explain about light weight roofing materials.

16 a. What are the different methods of preservations used in timber? Explain them in detail.

OR

b. Compare stone masonry and brick masonry.

17 a. Explain the methods of Damp proofing with neat sketch

OR

b. Brief note on materials used for scaffolding.

18 a. Expalin the tube scaffolding.

OR

b. Differenate formwork & centering.

Answer ALL questions
PART-C (2 x 15 = 30)

19 a. Explain the laboratory tests conducetd on cement.

OR

b. Classify the bridges according to different classification systems.

20 a. What is FRP? Discuss in detail.

OR

b. Explain in detail about anti-termite measures and treatment in building construction.

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VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E./ B.TECH DEGREE EXAMINATIONS- APRIL -2022
CIVIL ENGINEERING
FIRST SEMESTER
ENGINEERING SURVEYING

Time : Three Hours   Maximum Marks:100 Marks

Answer **ALL** questions
Part-A (10 x 2 =20 Marks)

1   Write the equation for correction of temperature.
2   Define Bench Mark and list out its types
3   What is contour? State the uses of contour.
4   Label the fundamental axis of Theodolite.
5   What are sources of local attractions?
6   Define Declination and Dip in compass surveying.
7   What is Mean sea level?
8   State the differences between lunar tides and solar tides.
9   What is called trilateration in modern positioning system?
10   Differentiate between microwave and electro optical system.

Answer **Any FIVE** questions
Part-B (5 x10 =50 Marks)

11 a.   Write about various classifications of surveying and Explain them briefly.
                                    OR
   b.
        Write notes on the following: a. Direct ranging b. Indirect ranging

12 a.   What is meant by interpolation of contours? Describe the various methods used.
                                    OR
   b.   Recommend the various methods of horizontal angle using a theodolite.

13 a.   Explain the different between tangential and stadia tachometry. How will you determine the
        stadia constants?

OR

b. The following bearings were observed with a compass. Calculate the interior angles

Line	F.B
AB	60º 30'
BC	122º 0'
CD	46 º 0'
DE	205 º 30'
EA	300 º 0'

14 a. The following are bearings taken on a closed compass traverse

Line	F.B	B.B
AB	80º 10'	259º 0'
BC	120º 20'	301 º 50'
CD	170 º 50'	350 º 50'
DE	230 º 10'	49 º 30'
EA	310 º 20'	130 º 15'

OR

b. Explain the following.   a. Radiation b. Intersection

15 a. Explain the working operations in plane table surveying

OR

b. What is a three point problem in hydrographic surveying? List the various solutions for the problem? Explain in detail.

16 a.
    Describe briefly the different methods of prediction of tides.

OR

b. Explain about the components of a simple curve with the help of a neat diagram.

17 a. Discuss the different sources of errors for total station

OR

b. List out the various measurements of GPS. Explain them.

18 a. Classify the main components of GPS receiver and explain them briefly

OR

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b.

. Classify the different types of Sounding methods and tides? Explain any two

Answer ALL questions
PART-C (2 x 15 = 30)

19 a. It was required to ascertain the elevation of two points P and Q and a line of levels was run from P to Q. The leveling was then continued to a bench mark of 83.500, the readings obtained being as shown below. Obtain the R.L. of   P and Q.

B.S	I.S	F.S	R.L	Remarks
1.622				P
1.874		0.354		
2.032		1.78		
	2.362			Q
0.984		1.122		
1.906		2.824		
		2.036	83.5	B.M

OR

b. Explain the permanent adjustment of theodolite.

20 a. The bearings taken on a closed compass traverse are as follows: Examine the local attraction and determine the correct magnetic bearings of the lines.

Line	F.B	B.B
AB	61º 05′	240º 20′
BC	100º 20′	282 º 35′
CD	151 º 35′	331 º 45′
DE	210 º 50′	30 º 05′
EA	290 º 50′	111º 10′

OR

b. Explain the Tilt Distortion with neat sketch in Photographic method.
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VINAYAKA MISSION'S RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APRIL - 2022
COMMON TO ALL BRANCHES
PHYSICAL SCIENCES
(Candidates admitted under 2021 Regulations-SCBCS)

Time : 1 1/2 Hours   Maximum Marks:50 Marks

PART A - ENGINEERING PHYSICS

Answer **ALL** questions
Part-A (5 x 2 =10 Marks)

1   Recognize the characteristics of laser.
2   Schedule any two applications of holography.
3   Tell about the characteristics of graded index multimode fiber.
4   Express about piezo-electric effect.
5   Schedule the Industrial applications of ultrasonic waves

Answer **Any FIVE** questions
Part-B (2 x12 =24 Marks)

6 a.   Predict the applications of laser in communication, military and chemical fields.

OR

   b.   Express the various types of fibers based on refractive index profile.

7 a.   Practice obtaining the expression for velocity of SONAR.

OR

   b.   Interpret the biological and chemical applications of ultrasonics.

Answer ALL questions
PART-C (1 x 16 = 16)

8 a.   Tell about holography. Illustrate the construction and working of holography with neat diagram.

OR

   b.   Demonstrate piezo- electric effect? Explain with a neat circuit, the generation of ultrasonic using a piezo- electric oscillator.

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PART B - ENGINEERING CHEMISTRY
(Candidates admitted under 2021 Regulations-SCBCS)

Time : 1 1/2 Hours   Maximum Marks:50 Marks

Answer **ALL** questions
Part-A (5 x 2 =10 Marks)

1   What is EDTA? Write its structure?
2   How calgon conditioning is superior than other methods?
3   Define electrochemical series.
4   State pilling bed worth rule.
5   Recall cetane number.

Answer **Any FIVE** questions
Part-B (2 x12 =24 Marks)

6 a.   How is exhausted resin regenerated in an ion-exchanger? What are merits and demerits of ion-exchange method?

OR

  b.   List out the various water quality parameters for the drinking water.

7 a.   Discuss about electrochemical series and their applications.

OR

  b.   What is power alcohol? Explain its manufacture, properties of power alcohol.

Answer ALL questions
PART-C (1 x 16 = 16)

8 a.   How is internal treatment of boiler water carried out using phosphate, Carbonate, Sodium aluminate and calgon conditioning?

OR

  b.   Explain Otto-Hoffman's by product oven method for manufacture of metallurgical coal.

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