Code No: R1621015　　　　　　　　　(**R16**)　　　　　　　　　(SET - 1)

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
SURVEYING
(Civil Engineering)

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

~~~~~~

PART –A

1. a)　Write the Uses of surveying

   b)　What is Electronic distance measurements

   c)　Write the Characteristics of contours.

   d)　Explain the Principles of Electronic Theodolite

   e)　Write the difference between simple and compound curves

   f)　How to calculate capacity of reservoir

PART -B

2. a)　What are different methods of plane Survying? Under what circumstances they are preferred? Also give salient features of these methods
   b)　What do you understand by closing error? Show how can it be adjusted by graphical method

3. 　　What is local attraction? Explain how the bearings are corrected for local attraction

4. a)　What is meant by the reduction of levels? Explain briefly the different methods of leveling
   b)　Explain in detail how the contour plan is used to calculate the capacity of a reservoir

5. a)　Describe the various types of Theodolite
   b)　How would you measure a horizontal angle by reiteration method?

6. 　　What is meant by degree of a curve? What are the different methods of designating a curve? Derive a relationship between the degree of a curve and its radius.

7. a)　A straight level road is to be constructed along hill side having lateral slope of 1 in 8. The formation width is 25 m with side slopes 1: 1 in cutting and 2: 1 in filling. Calculate the total volume of earth work in a length of 257 m if the area of cutting and fill in each cross section are equal.
   b)　List the general methods of calculating area with one example

Code No: R1621015 $\boxed{\textbf{R16}}$ $\boxed{\textbf{SET - 2}}$

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
SURVEYING
(Civil Engineering)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
~~~~~~

PART –A

1. a) Write the Errors in survey measurements

   b) Define Meridians, Azimuths and Bearings,

   c) Write the Uses of contours

   d) Write the uses and adjustments of Theodolite

   e) Write about geodetic surveying

   f) Write the formula to calculate areas

PART -B

2. a) Explain the principle on which chain survey is based.

   b) What factors should be considered in deciding the stations of a chain survey?

3. a) What is declination? What are different types of variations in declination?

   b) In an old survey made when the declination was 40 W, the magnetic bearing of a given line was 2100. The declination in the same locality is now 100 E. What are the true and present magnetic bearing of the line?

4. a) The following consecutive readings were taken with a level and 3 m leveling sta as a continuously sloping ground at a common interval of 20m, 0.602, 1-234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722. R. L of the first point was 192.122. Calculate reduced levels of points and gradient of the line joining first and the last points

   b) Compare Rise and Fall method of leveling with Height of collimation method.

5. Give a list of the permanent adjustments of a transit theodolite and state the object of each of the adjustment. Describe how you would make the Trunnion axis perpendicular to the vertical axis.

6. Given that the intersection angle of a two degree curve is 120^0, Compute the various elements of a simple curve.

7. a) Discuss different methods of computation of area from field notes.

   b) A straight railway embankment is made on a ground having a transverse slope of 1 in 8. The formation width of the embankment is 30m. and the side slopes are 1.5H to 1 V. At three sections 50m apart, the heights of the bank, at the center of the formation level are 10m, 15m and 18m. Compute volume of earthwork involved in the embankment

Code No: R1621015 $\boxed{\text{R16}}$ $\boxed{\text{SET - 3}}$

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
SURVEYING
(Civil Engineering)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
~~~~~~

PART –A

1. a) Write the Principles of surveying

   b) Define Azimuths and Bearings

   c) Explain the different methods of conducting contour surveys

   d) Discuss briefly on Tachometric Surveying

   e) Write the importance of Total Station

   f) Write the formula to calculate volumes

PART -B

2. What do you mean by orientation? Explain different methods of orienting the plane Table with the help of neat sketches.

3. What are the essential differences between chain Survey and compass Survey. Under what circumstances compass Survey is preferred to other types of Surveys

4. a) Explain briefly fly levelling and reciprocal leveling

   b) The following readings were taken with a level in sequence as follows: 1.585, 1.315, 2.305, 1.225, 1.325, 1.065, 1.815 and 2.325 The level was shifted after the third and sixth readings. The second change point was a bench mark of elevation 150.375m. Find the reduced levels of the remaining stations. Use the rise and fall method.

5. a) Describe how you would test and if necessary adjust the line of collimation of a vernier Theodolite.

   b) When would you suggest a Theodolite traversing by the method of deflection angles. Explain with neat sketch

6. What are the different methods of setting out simple curves? Explain Rankines method of deflection angles for setting out curves

7. a) What is a prismoid? Derive the prismodial formula

   b) What is Simpson's rule? Derive an expression for it

Code No: R1621015 $\boxed{\textbf{R16}}$ $\boxed{\textbf{SET - 4}}$

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
SURVEYING
(Civil Engineering)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
~~~~~~

PART –A

1. a) What are the Objectives of surveying

   b) Define Bearings

   c) Write the permanent adjustments in levelling

   d) Write the principles of Theodolite

   e) Discuss on Global positioning system

   f) How to calculate volume of borrow pits

PART -B

2. a) List out the different accessories of plane table Surveying. Also explain the purpose for which they are used

   b) What are the various accessories required in linear measurements? Describe briefly.

3. a) Explain the different methods of plotting a compass traverse

   b) Explain clearly the difference between prismatic compass and surveyors compass?

4. a) Explain the steps involved in levelling.

   b) What is "differential levellings"? How it differs from "Reciprocal levelings"?

5. Obtain an expression for the difference of level between two points A and B, a considerable distance apart, B being the higher, by vertical angle readings from the point A. Take into account the height of the instrument at A and the height of the target at B. What is the assumption made in obtaining your equation for the difference of level?

6. Calculate the ordinates from the long chord at 7.5 m interval to set out a simple circular curve of 100. The length of the long chord is 100m.

7. a) What is Trapezoidal Rule. Derive an expression for it.

   b) In order to obtain area of a plot, a series of perpendicular offsets 2.2m, 3.0m, 1.65m, 2.46m, 2.0m, 2.25m and 1.68m were laid from a survey line to an irregular boundary at regular intervals of 5m. Find the desired area using
   i. Trapezoidal rule   ii. Simpson's Rule

1 of 1