19305

21718

2 Hours / 50 Marks

Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Answer ***each*** *next main question on a* ***new*** *page.*
(3) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(4) Figures to the ***right*** *indicate* ***full*** *marks.*
(5) Assume suitable data, if ***necessary****.*
(6) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*
(7) Mobile Phone, Pager and any other Electronic Communication devices are ***not*** *permissible in Examination Hall.*

Marks

1. Attempt **any seven** : **14**

a) Define :
   i) Reduced level
   ii) Bench Mark.

b) State under what situations fly levelling is adopted ?

c) State the sources of errors in levelling.

d) Distinguish between contour interval and horizontal equivalent.

e) Draw contours to represent the following features :
   i) Ridge line
   ii) Uneven ground.

f) Define the term latitude and departure.

g) What is meant by swinging of telescope ?

h) State Bowditch rule.

i) State any two uses of total station.

j) State any two features of digital theodolite.

2. Attempt **any four** : **(4×3=12)**

a) State the fundamental axes and mention their relationship for a dumpy level.

b) Differentiate between rise and fall method and H.I. method of reduction of levels.

P.T.O.

Marks

c) Explain profile levelling. What are important points to be kept in mind during profile levelling ?

d) Explain the temporary adjustments of dumpy level.

e) Give essential steps in conducting differential levelling.

f) State the uses of auto level.

3. Attempt **any four**: **(4×3=12)**

a) The following reading were taken on a continuously sloping ground with a level and staff 1.100; 2.300; 0.450; 1.800; 2.750; 0.850; 1.200; 2.000; 2.850.

Enter the readings in a levelling book format and calculate the reduced levels. R. L. of the first points is 100.00 m.

b) What are the different types of levels used in levelling ? Explain the suitability of each in specific situations.

c) State the methods of contour interpolation and explain any one.

d) Explain four characteristics of contour with neat sketch.

e) Explain with example the establishing grade contour.

f) Explain the uses and applications of contour maps.

4. Attempt **any four**: **(4×3=12)**

a) Describe the procedure for measurement of deflection angle by theodolite.

b) Which errors are eliminated by method of repetition ?

c) What are the checks applied in case of closed traverse ?

d) Describe the method of prolonging a straight line with the help of transit theodolite.

e) Explain how data is retrieved through total station.

f) Write stepwise procedure of measurement of horizontal angle by digital theodolite.
