Roll No. ☐☐☐☐☐☐☐☐☐☐☐          Total No. of Pages : 02

Total No. of Questions : 09

**B. Architecture (2012 & Onwards)     (Sem.–3)**
# SURVEYING AND LEVELLING – I
**Subject Code : BACH-308**
**M.Code : 70420**

Time : 3 Hrs.                                        Max. Marks : 50

**INSTRUCTIONS TO CANDIDATES :**
1. **Attempt FIVE questions (Q.2 to Q.9) along with Q.No. 1.**
2. **Question no. 1 is COMPULSORY.**

1.     **Choose the correct answer :**

a) What are used to mark the positions of the stations or terminal points of survey line?

   a) Arrows                          b) Pegs

   c) Ranging rods                    d) Plumb bob

b) Which cross staff consists of two pairs of vertical slits giving two lines of sights at right angles to each other?

   a) Open cross staff                b) French cross staff

   c) Adjustable cross staff          d) In all types

c) Which of the following is not a method of leveling?

   a) Barometric leveling             b) Trigonometric leveling

   c) Spirit leveling                 d) Traverse leveling

d) Which branch of surveying is used to find the elevations of given points with respect to given or assumed datum?

   a) Leveling                        b) Contouring

   c) Traversing                      d) Plane table surveying

e) Which line passes through a point, such that plane passing that point and the north and south poles, intersects with the surface of the earth?

   a) True Meridian                   b) Magnetic Meridian

   c) Arbitrary Meridian              d) Survey line

2.  a)  State the objective of leveling.

    b)  State the fundamental lines of level?.

    c)  How is the accuracy of reduction level checked?

    d)  State the use of tilting level.

    e)  Under what circumstances the reciprocal leveling is used?

3.  Describe various type of survey used in land survey. Which type will you suggest to plan roads in approximately 50 acers in hill area?

4.  Explain the Auto level and staff with neat sketches.

5.  The following consecutive readings were taken with a level and 4.0m Staff on a continuously sloping ground at a common interval of 30 m –0.780, 1.535, 1.955, 2.430, 2.985,3.380, 1.250, 1.860, 2.365, 3.540, 0.935, 1.145, 1.630 and 2.645.

    The RL of first point A was 100.80- m. Rule out a page of level book & enter above readings.
    Calculate the RL of all the points by Rise & Fall Method. Also calculate the gradient of the line joining the first & last point.

6.  Describe Abney level and tangent clinometers in detail.

7.  a)  Explain the plane table survey.

    b)  Differentiate between compass survey and plane table survey.

8.  Define the following terms :

    a)  Back sight, Intermediate sight, Foresight.

    b)  Change point, Height of Instrument.

    c)  How is the accuracy of reduction level checked?

    d)  State the advantages of Auto set Level.

9.  Define the following Terms :

    a)  Centering

    b)  Transiting

    c)  Swinging

    d)  Transit station

    e)  Transit line

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student**.