PARUL UNIVERSITY
COLLEGE OF AGRICULTURE
B.Sc.(Hons.) Agriculture Winter 2018 - 19 Examination

Semester: 2   **Date: 19/12/2018**
Subject Code: 20103151   **Time: 10.30 am to 1.00 pm**
Subject Name: Soil and Water Conservation Engineering   **Total Marks: 50**

Instructions
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as Directed.

A. Fill in the blanks. (Each of 0.5 marks)   **(05)**
1. Projects having CCA less than or equal to .... ha are termed as minor irrigation projects.
2. The main principle of surveying is working from .... to part.
3. Medium irrigation projects have CCA less than 10000 ha but more than .... ha.
4. The water power (WP) of a pump can be calculated using .... formula.
5. Unit for specific weight of water is ....
6. Full form of CCA is ....
7. The discharge of an emitter varies from .... lph.
8. Drip irrigation can save water upto .... %.
9. Rivers can be called as .... water source.
10. .... is created for artificial storage of water.

B. Multiple choice type questions. (Each of 0.5 marks)   **(10)**
1. The dip of magnetic needle is
   a) 90° at equator   **c)** 0° at equator
   b) 180° at equator   **d)** None of the above
2. The working principle of optical square is based on
   a) reflection   **c)** refraction
   b) double reflection   **d)** double refraction
3. A benchmark is
   a) a reference point   **c)** point of known elevation
   b) the very first station   **d)** last station were survey closes
4. Compensating error is proportional to
   a) L   **c)** $\sqrt{L}$
   b) 3L   **d)** 2L
5. Dams can be considered as
   a) Conventional energy source   **c)** Non conventional energy source
   b) Non renewable energy source   **d)** None of the above
6. A Clinometer is used to measure
   a) approximate distance   **c)** the angle of a slope
   b) reduced level of a place   **d)** bearing of a line
7. The area envisaged to be covered under irrigation project is of the order over 10000 hectare is known as
   a) Major Irrigation Projects   **c)** Medium Irrigation Projects
   b) Minor Irrigation Projects   **d)** None of the above
8. Strength of fix is poor when
   a) station is on the great circle   **c)** station is outside the great circle
   b) station is within the great triangle   **d)** station is within the great circle
9. A 15cm theodolite means
   a) length of telescope is 15cm   **c)** diameter of lower plate is 15cm
   b) height of standards is 15cm   **d)** radius of upper plate is 15cm
10. The horizontal angle between the longitudinal axis of the freely suspended magnetic needle and horizontal line is called
    a) dip   **c)** declination
    b) azimuth   **d)** None of the above

11 The Well Conditioned triangle is angle should not be less than
a) 45 degrees   c) 30 degrees
b) 15 degrees   d) 60 degrees

12 The length of gunters chain is
a) 66ft   c) 100ft
b) 50ft   d) 33m

13 The curvature of earth is usually taken into account when the extent area is more than
a) 50 square km   c) 100 square km
b) 200 square km   d) 250 square km

14 The parallax can be removed by
a) focussing of the objective   c) focussing the eyepiece
b) focussing both   d) none of these

15 Chain survey is recommended
a) in a city area   c) in a fairly open area
b) in a forest area without local attraction   d) in hilly area

16 Chain survey is recommended when the area is
a) crowded   c) undulating
b) simple   d) level

17 Mean sea level adopted by survey of India for reference is located at
a) Calcutta   c) Bombay
b) Karachi   d) Delhi

18 When temperature rises, the length of bubble in bubble tube :
a) remains same   c) decreases
b) increases   d) is uncertain

19 A chain may get elongated due to
a) change to temperature   c) difference in pull
b) openings of rings   d) kinks in links

20 A planimeter is used for measuring :
a) inclination of a slope   c) altitude of a place
b) area of a map   d) speed of automobile

Q.2 Do as Directed.

A. Define the following. (Any five)   **(05)**
1. Enlist any three water measurement methods.
2. Enlist any four component of drip irrigation system.
3. Levelling.
4. Surveying
5. Drip irrigation
6. Sprinkler irrigation
7. Enlist any four water lifting device.

B. Answer the following. (Any Five)   **(05)**
1. Explain the use of chain survey.
2. Explain the use of theodolite.
3. Explain the use of water lifting device.
4. What are the various sources of water?
5. Explain Water Power.
6. Explain Shaft Power.
7. Explain Input Power.

Q.3 Write short notes. (Any five)   **(10)**
1. Drip irrigation   2. Sprinkler irrigation   3. Furrow irrigation
4. Purpose of irrigation   5. Reciprocating Pump   6. Irrigation

Q.4 Attempt any Three/Long Questions/Example   **(15)**
1. Layout of Drip irrigation system.
2. Advantages and disadvantages of irrigation.
3. Major and minor irrigation project.
4. Explain velocity – area method for water measurement.