Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

COLLEGE OF AGRICULTURE

B.Sc. (Hons.), Winter 2016 - 17 Examination

Semester: 1 **Date: 28/12/2016**
Subject Code: 20106101 **Time: 2:00pm to 5:00pm**
Subject Name: Fundamentals of Soil Water and Conservation Engineering **Total Marks: 60**

Instructions

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section – A, section – B on separate answer sheets.

SECTION A

Q.1 Fill in the blanks. (Each of 0.50 marks) **(10)**

1. Where surveys in which the curvature of earth is considered are known as _____surveys
2. Drip Irrigation can save water to the extent of _____ %
3. Sprinkle Head is a component of _____Irrigation System.
4. The water power (WP) of a pump can be calculated using the _____equation.
5. Specific weight of the water unit is_____
6. CCA full name is _____
7. The discharge of the emitter varies from _____ lph
8. Surface water source is _____
9. Minor Irrigation Projects: Projects having CCA less than or equal to _____ha are termed as minor irrigation project
10. Major Irrigation Projects: The area envisaged to be covered under irrigation is of the order over _____hectare.
11. Medium Irrigation Projects: Projects having CCA less than 10,000 ha but more than _____ha
12. The smallest basic unit of length in metric system, is_____
13. Measuring tape is made up of _____steel.
14. Surveying is the first _____for the execution of any engineering project
15. The object of surveying is preparation of ……. of the area
16. Surveys in which curvature of the earth is ignored is ignored are known as _____surveys
17. In the absence of accurate _____it is difficult to layout the alignment of roads, railways and canals.
18. _____constructed to create artificial storage of water
19. Ranging rods are used to denote _____point
20. The main principle of surveying is working from _____to _____

Q.2 Match group A with group B. (Each of 0.50 marks) **(05)**

A	B
1) Chain	a) Denote station point
2) Centrifugal Pump's Component	b) Water lifting device
3) Theodolite	c) Gravatt
4) Reciprocating Pump	d) Levelling
5) Wye level	e) Vane
6) Ranging rod	f) Height of instrument
7) Tape	g) Water apply by drip by drip
8) Cross staff	h) 1954
9) Drip Irrigation	i) 20mts and 30mts
10)Koshi Project	j) Invar steel

Q.3 Define the following. (Any ten) **(05)**

1. How many Water Measurement Methods are used in Irrigation System?
2. Describe Drip Irrigation.
3. Unit of Velocity is _____.
4. Enlist The Water lifting devices.
5. Describe Sprinkle Irrigation
6. Which components are used in Drip Irrigation System?
7. How many Directions are there in Surveying?
8. Define Theodolite.

9. What is Contour Map?
10. Define levelling.
11. Measuring tape made by_____
12. Define Surveying.

Q.4 Answer the following. (Any ten) **(10)**

1. What is Irrigation?
2. Why irrigation is required?
3. Water is natural and artificial source?
4. Explain Shaft Power
5. What do you mean by Input Power?
6. What do you mean by Map?
7. What is importance of surveying?
8. What was the use of Chain in chain survey?
9. What is ranging rod?
10. Write down any two Major Irrigation project in India.
11. Theodolite is use for_____
12. What is Length of Engineering Chain?

SECTION B

Q.1 Multiple choice type questions. (Each of 0.50 mark) **(10)**

1.The equator the dip of the needle is :
a) 180º
b) 0º
c) 90º
d) 45º

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

3. Strength of fix is poor when :
a) station is on great circle
b) station is within the great triangle
c) station outside the great circle
d) station within great circle

4. The dip of magnetic needle is :
a) 90º at equator
b) 180º at equator
c) 0º at equator
d) none of above

5. At equator the dip of needle is.
a) 180 degrees
b) 90 degrees
c) 0 degrees
d) 270 degrees

6. A 15cm Theodolite means
a) length of telescope is 15cm
b) height of standards is 15cm
c) dia of Lower plate is 15cm
d) radius of upper plate is 15cm

7. A Clinometer is used to measure :
a) distance approximately
b) reduced level of a place
c) the angle of a slope
d) bearing of a line.s

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

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

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

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

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

13. Water surface at rest is …
a) level surface
b) tangential surface
c) horizontal surface
d) vertical surface

14. the horizontal angle between the longitudinal axis of the freely suspended magnetic needle and horizontal line is called

a) dip
b) azimuth
c) declination
d) None

15. The parallax can be removed by …

a) focussing of the objective
b) focussing both
c) focussing the eyepiece
d) none of these

16. Chain survey is recommended when the area is

a) crowded
b) simple
c) undulating
d) level

17. The length of gunters chain is

a) 66ft
b) 50ft
c) 100ft
d) 33m

18. The curvature of earth is usually taken into account when the extent area is more than..

a) 50square km
b) 200 square km
c) 100 square km
d) 250 square km

19. The Well Conditioned triangle is angle should not be less than

a) 45 degrees
b) 15 degrees
c) 30 degrees
d) 60 degrees

20. The area envisaged to be covered under irrigation project is of the order over 10000 hectare is known as

a) Major Irrigation Projects
b) Minor Irrigation Projects
c) Medium Irrigation Projects
d) none of above

Q.2 Give the sentence true or false. (Each of 0.50 mark) **(05)**

1. Contour is the height of buildings in an area.
2. Dumpy means short and thick.
3. Chain is of 20mts and 30mts.
4. Measuring tape is made of invar.
5. Cross staff is not used in levelling
6. River is an artificial source of water.
7. Dripper is a Component of Drip Irrigation System.
8. Dam is an artificial source of water.
9. Water apply by drop by drop is called Sprinkle Irrigation System.
10. Drip irrigation method is time consuming method.

Q.3 Write short notes. (Any five) **(10)**

1. Explain Methods of Triangulation?
2. What is Purpose of Irrigation?
3. Major Sources of Water in India.
4. Draw Layout of Drip Irrigation System
5. What is Advantages of Irrigation?
6. What is Reciprocating Pump? What is the use of Reciprocating Pump?

Q.4 Differentiate the following. (Any five) **(05)**

1. Levelling and Centring.
2. Drip and Sprinkle Irrigation.
3. Land and Chain Surveying.
4. Major and Minor Irrigation Project.
5. Back sight and Fore sight
6. Dumpy level and Wye level.
7. Tripod stand and Ranging rod.