

2. \_\_\_\_\_ is the unit of delta in SI system of units.
- a) Metre;                      b) Centimetre;                      c) Feet;                      d)
3. In canal irrigation, generally the flow is due to \_\_\_\_\_.
- a) Gravity;                      b) Pressure;
- c) Both gravity and pressure;      d) Neither gravity nor pressure
4. \_\_\_\_\_ is an example for surface irrigation system.
- a) Furrow;                      b) Center pivot;                      c) Lateral move;
5. In the design of weir on impervious soil, \_\_\_\_\_ need not be considered.
- a) Weight of weir;                      b) Hydrostatic pressure force;
- c) Uplift force;                      d) Wind force
6. In a tank surplus weir, the difference between the maximum water level and the weir crest level is \_\_\_\_\_ the weir.
- a) Head over;                      b) Length of;                      c) Width of;                      d) Height
7. In a notch type canal drop, usually \_\_\_\_\_ notches are designed.
- a) Rectangular;                      b) Triangular;                      c) Trapezoidal;
8. Cross drainage works are needed in \_\_\_\_\_ canals.
- a) Ridge;                      b) Watershed;                      c) Contour;
9. \_\_\_\_\_ is used to prevent silt particles getting into a canal.
- a) Silt excluder;                      b) Silt ejector;                      c) Weir;
10. \_\_\_\_\_ efficiency is useful in determining the water loss from an irrigation field.
- a) Application;                      b) Storage;                      c) Distribution;

**PART B (10 x 2= 20 Marks)**

11. State any two reasons why irrigation is needed.

20. List any two advantages of forming water user associations.

**PART C (5 x 14= 70 Marks)**

21. a) List the factors affecting duty and explain how duty can be improved.

**(OR)**

b) After how many days a farmer should apply water to his/her field of irrigation water, if the field capacity of the soil is 27%, permanent wilting point of soil is 15%, bulk density of soil is  $1500 \text{ Kg/m}^3$ , effective root zone depth is 100 cm and consumptive use of water is 8 mm. If the irrigation has to start when soil moisture reaches 20%, determine the depth of water to be supplied at each irrigation.

22. a) Describe, in detail, sprinkler method of irrigation.

**(OR)**

b) Compare surface irrigation with drip irrigation.

23. a) Explain, in detail, the general ways in which a gravity dam could fail and the measures to be taken to avoid such failures.

**(OR)**

b) Derive an expression for the base width of a gravity dam based on (i) overturning criterion and (ii) sliding criterion.

24. a) Draw a neat sketch of a diversion headwork and describe the components.

**(OR)**

b) Describe, with neat sketches, river training works.

