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**5th Sem. / Civil / BT / CM**

**Subject : Irrigation Engg. and Drawing**

Time : 4 Hrs.

M.M. : 150

**SECTION-A**

**Note:** Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1
- a) Watershed canal
  - b) Canal head regulator
  - c) Inundation Irrigation.
  - d) Rockfill dam
  - e) Ridge canal
  - f) Emergency spillway
  - g) Direct run off
  - h) Water table
  - i) Silt factor
  - j) Radius of influences
  - k) Borrowpit

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- l) Berm of a canal
- m) Waterway of a drain.
- n) Non scouring velocity
- o) Silt excluders
- p) Surface drains
- q) Level crossing
- r) Overhead Irrigation

**SECTION-B**

**Note:** Short answer type questions. Attempt any ten parts 10x4=40

- Q.2
- i) How climatic conditions effect duty ?
  - ii) Name any four rigid dams.
  - iii) Write the relation between silt factor and grain size.
  - iv) Name any four rabi crops.
  - v) Differentiate between confined and unconfined aquifer.
  - vi) Explain the functions and capacity of under sluices.

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- vii) Explain Kennedy's silt theory.
- viii) What are the requirements of an outlet.
- ix) What is fall and its necessity?
- x) What are the requirements of a canal lining?
- xi) What is the necessity of a divide wall as a part of canal head works.
- xii) What are the points which favour selection of site for headworks?
- xiii) Explain the concept of small and micro dams.
- xiv) What is the basic concept of unit hydro graph?
- xv) Differentiate between automatic and non automatic rain gauges.

### SECTION-C

**Note:** Long answer type questions. Attempt any three questions.  $3 \times 10 = 30$

- Q.3 Explain the suitability layout and advantages of drip irrigation.

- Q.4 Describe cement concrete lining and brick lining of canals
- Q.5 What is well development? Explain its various methods.
- Q.6 Explain classification of dams in detail.
- Q.7 Explain causes of water logging suggest remedial measures to prevent it.

### Section-D

**Note-** Attempt any two questions.  $2 \times 25 = 50$

- Q.8 Draw the plan and X-Section of a canal head regulator showing its different components.
- Q.9 Draw the X-Section of an unlined channel fully in cutting.
- Q.10 Draw the L-Section and X-Section of any typical fall with details of wing wall, pitching, flooring and toe wall.
- Q.11 Draw the plan and X-Section at D/S curved head of a guide bank showing its stone pitching and launching apron.

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