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**Question Paper Code: 55A01**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fifth Semester

Agricultural Engineering

15UAG501 IRRIGATION AND DRAINAGE ENGINEERING  
(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5 x 1 = 5 Marks)

1. The optimum depth of kor-watering for rice is CO1-R  
(a) 25cm                      (b) 19cm                      (c) 20cm                      (d) 10cm
2. The consumptive use of water for a crop is CO2-R  
(a) The total quantity of water needed for full growth  
(b) The depth of water on the surface  
(c) The duty of water  
(d) The rate of infiltration
3. A dam or weir is constructed on a CO3-U  
(a) Perennial river              (b) Nallah                      (c) Small stream              (d) seasonal stream
4. Canal outlets also called as CO4-R  
(a) Canal escapes              (b) Canal modules              (c) Canal off takes              (d) Canal openings
5. The canal which can irrigate on one side only is called CO5-R  
(a) Water shed canal              (b) Contour canal              (c) Side slope canal              (d) natural canal

PART – B (5 x 3= 15Marks)

6. Define river basin. CO1-R
7. Illustrate about erodible channels. CO2-U
8. What are head works, write its applications. CO3-R

9. List the merits of lining in water courses . CO4-R
10. Define Regime of a canal CO5-R

PART – C (5 x 16= 80Marks)

11. (a) Discuss then various factors affecting the duty and remedial measures adopted. CO1-U (16)
- Or
- (b) Write short notes on CO1-R (16)
- (i) Irrigation scheduling  
(ii) Crop water requirement and  
(iii) Irrigation efficiencies
12. (a) Explain with neat sketches the following types application of water CO2-U (16)
- (i) Furrow irrigation  
(ii) Basin irrigation  
(iii) Drip irrigation.
- Or
- (b) Describe the design procedure of design of canals by Kennedy and Lacey's theory. CO2-U (16)
13. (a) (i) Discuss the various factors affecting the selection of a Particular type of dam . CO3-R (10)
- (ii) Discuss about any one types spillway with neat sketch. CO3-U (6)
- Or
- (b) (i) Discuss the various forces acting on a gravity dam . CO3 -R (10)
- (ii) Illustrate the three types of earthen dams. CO3 -U (6)
14. (a) List the types of canal drops. Explain any two types of drops with neat sketches CO4 -R (16)

Or

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|-----|-----|---|---------|------|
|     | (b) | (i) Explain with neat sketch aqueduct and canal syphon type of cross drainage   | CO4-U   | (8)  |
|     |     | (ii) Summarize the merits of lining and the various materials used for canal lining   | CO4-U   | (8)  |
| 15. | (a) | Write short notes on<br>(i) Darcy's law and its limitations<br>(ii) Purposes of drainage and<br>(iii) Infiltration theory . | CO5-Ana | (16) |
|     |     | Or  |         |      |
|     | (b) | (i) Discuss the design principles to be followed while designing a sub surface drainage system.                             | CO5-U   | (8)  |
|     |     | (ii) What is leaching , also explain the methods of leaching and its merits   | CO5-R   | (8)  |

