G.R. No.	

Dec   ~~May~~ 2021 – INSEM+ENDSEM EXAM

F. Y. M. TECH. (WREE) (SEMESTER - I)
COURSE NAME: Irrigation & Drainage
COURSE CODE: CVPA11203
(PATTERN 2020)

3 hrs

Time: [~~2 Hour~~]   [Max. Marks: 60]

(*) Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed
4) Use suitable data where ever required

Q.1 a	Classify Irrigation projects based on method of irrigation	[4 marks]
Q.1 b	Compute the frequency of irrigation from the following data: Field capacity = 35%; Permanent wilting point = 18%; Density of soil = 1.5 gm/cm³; Depth of root zone = 70 cm; Daily consumptive use of water = 17 mm; Readily available moisture is 75% of the available moisture	[6 marks]
Q.2 a	List advantages and disadvantages of furrow irrigation	[4 marks]
Q.2 b	Find the relation between width and depth for maximum discharge through rectangular channel	[6 marks]
Q.3 a	List various structures for measurement of irrigation water	[4 marks]
Q.3 b	Explain measurement of irrigation water with venturi meter	[6 marks]
Q.4 a	Draw and explain typical layout of drip irrigation	[4 marks]
Q.4 b	List types of drip systems. Explain in detail on-line emitters	[6 marks]
Q.5 a	List benefits of agricultural drainage.	[4 marks]
Q.5 b	A 1.2 m deep soil column consists of three layers, having 0.50, 0.4, and 0.3 m depth of the layers. The horizontal hydraulic conductivity of the layers is 0.20, 0.15, and 0.25 m³/m²/h, respectively. Determine the resultant horizontal hydraulic conductivity of the soil column.	[6 marks]
Q.6 a	What are the limitations of Hooghoudt Equation	[4 marks]

Q.6 b   A small watershed consists of 1.5 km² of cultivated area (C=0.20),   [6 marks]
2.5 km² under forest (C=0.10) and 1.0 km² under grass cover
(C=0.35). There is a fall of 22m in a watercourse length of 1.8 km.
The intensity-frequency-duration relation for the area may be
taken as where I is in cm/h, Tr is in years and t is in minutes.
Estimate the peak rate of runoff for a 25 years frequency.