**D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**Set-: II**

**Q. Paper Code:**

**22CE304504**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

T. Y. B. Tech (Civil), Sem-V

**END SEMESTER EXAMINATION(ESE), DEC. – 2022**

Course Name: - **Irrigation Engineering,** Course Code: - **201CEL304**

Seat No:

**Day and Date: Tuesday, 13.12.2022**

**Time: 2.00 pm to 4.00pm Max. Marks- 50**

***Instructions:***

1. *Question No. 1&2 is compulsory.*
2. *Figure to the right indicate full marks.*
3. *Give suitable general Instructions*
4. *Any other Course Specific Instructions.*
5. *No questions should repeat from MSE/ISE*

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| **BT** | **CO’s** | **Q. No.** |  | | **Marks** |
|  |  | **Q.1** | **All Questions are compulsory** | | **20** |
| **1,2**  **3** | **CO1**  **CO1** | **a** | 1. Explain the Furrow method of irrigation with a neat sketch. 2. Find the time required to irrigate a border strip of length 203 m and width 10 m by a stream of discharge 0.043 cumecs. Average depth of flow is expected to be 63.5 mm and average infiltration rate for the soil may be taken as 50 mm/hr. |  | **4M**  **4M** |
| **1, 2** | **CO2** | **b** | What is balancing depth in a canal? Draw a neat sketch of relevant canal section and derive the relationship for the balancing depth. | **6 M** |
| **1,2** | **CO4** | c | Enlist the various methods of canal revenue assessment. Explain the area rate method for assessing the canal revenue. Also explain its merits and demerits. | **6 M** |
|  | | | | | |
|  |  | **Q.2** | **All Questions are compulsory (**internal sub question permitted for optional questions either a or b) | | **10** |
| **1,2** | **CO3** | **a** | Draw the neat sketch of section of a vertical drop weir and name its component parts. Explain the function of apron floor and weir wall. |  | **4** |
| **1,2** | **CO3** | **b** | Draw the layout of a typical diversion headwork and name its various components. Briefly explain the functions of following components-   1. Guide Bank 2. Head regulator   OR  Explain in detail the Bligh’s theory used for designing the length and thickness of impervious apron floor. | **6**  **6** |
|  | | | | | |
|  |  | **Q.3** | **All Questions are compulsory (**internal sub question permitted for optional questions either a or b) | | **10** |
| **1,2** | **CO3** | **a** | Explain with neat sketch a typical Arch dam. State under which condition it is preferred. |  | **4** |
| **1,2** | **CO3** | **b** | Enlist the different types of earth dams. Explain with sketches following methods of construction of earth dams –   1. Hydraulic fill method 2. Rolled fill method   **OR**  Enlist the various forces acting on a gravity dam. Explain How will you calculate following forces acting on dam.   1. Water pressure from upstream side 2. Self-weight of dam 3. Uplift pressure on dam. | **6**  **6** |
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|  |  | **Q.4** | **Attempt any two out of three questions** | | **10** |
| **1,2** | **CO2** | **a** | Explain in detail the functions of following types of reservoirs-   1. Storage or conservation reservoirs 2. Flood control reservoirs. |  | **5** |
| **1,2** | **CO2** | **b** | Discuss various points that need to be considered for selection of site for a reservoir. | **5** |
| **1,2** | **CO2** | **C** | Explain with a sketch the following terms –   1. Dead storage 2. Useful storage 3. Surcharge storage | **5** |

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