


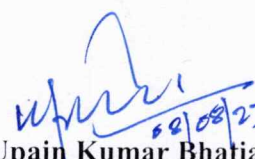
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|---|--|--|
|  AMRITSAR GROUP OF COLLEGES <small>NAAC Grade "A" 3rd Cycle Autonomous College</small> | Circular Assignment Pattern (w.e.f. Jul-Dec 2023) | Office of the Dean Academic Affairs |
| | DAA/AGC/ | 08.08.2023 |

As decided in the meeting with the Principal AGC, the assignments for internal assessment of theory subjects are to be designed to contain 40-50 questions. The questions should uniformly cover all the COs designated for the assignment.

The questions for each CO shall be framed for three categories of students i.e. Slow learners, Medium learners and Advance learners. Accordingly, students of these three categories shall be assigned requisite number of questions as per existing pattern as shown below:

| Q. No. | Weightage | Assignment 1 | | | Assignment 2 | | |
|--------|-----------|--------------|-----|-----|--------------|-----|-----|
| | | CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
| 1 | 2 marks | √ | | | √ | | |
| 2 | 2 marks | √ | | | √ | | |
| 3 | 2 marks | | √ | | | √ | |
| 4 | 2 marks | | √ | | | √ | |
| 5 | 2 marks | | | √ | | | √ |
| 6 | 2 marks | | | √ | | | √ |
| 7 | 4 marks | √ | | | √ | | |
| 8 | 4 marks | | √ | | | √ | |
| 9 | 4 marks | | | √ | | | √ |

The format/pattern of the assignment sheet is attached for reference. This pattern of assignments is to be followed w.e.f. Jul-Dec 2023.


Dr. Upain Kumar Bhatia
 Dean Academic Affairs
 AGC Amritsar
Dean Academic Affairs,
Amritsar Group of Colleges,
Amritsar.

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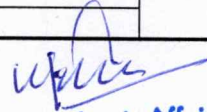
1. PA to Principal AGC for information.
2. Registrar AGC.
3. All Heads of academic and non-academic departments/sections.
4. Central Coordinator AGC-LMS

Amritsar Group of Colleges, Amritsar
(Autonomus College)

Max. Marks = 24

B.Tech (Civil Engineering) - 7th Sem
IRRIGATION ENGINEERING - II (ACCE - 16802)
ASSIGNMENT - 1

| This Column should not be printed for circulation in students | Q. No. | Questions to be attempted | | CO | |
|---|--------|--|--|-----|-----|
| | | Set 1: mention any two questiones from section A and One from Sec-B for each CO for Slow Learners (example: Set 1: Attempt Q.No. 1,3,12,13,21,23,32,37 and 44) | | | |
| | | Set 2: mention any two questiones from section A and One from Sec-B for each CO for Average Learners | | | |
| | | Set 3: mention any two questiones from section A and One from Sec-B for each CO for Advanced Learners | | | |
| Section A (2 marks each) | | | | | |
| For slow learners | 1 | Statement of question | | CO1 | |
| | 2 | | | | |
| | 3 | | | | |
| For average learners | 4 | | | | |
| | 5 | | | | |
| | 6 | | | | |
| For advanced learners | 7 | | | | |
| | 8 | | | | |
| | 9 | | | | |
| For slow learners | 10 | | | | CO2 |
| | 11 | | | | |
| | 12 | | | | |
| For average learners | 13 | | | | |
| | 14 | | | | |
| | 15 | | | | |
| For advanced learners | 16 | | | | |
| | 17 | | | | |
| | 18 | | | | |
| For slow learners | 19 | | | CO3 | |
| | 20 | | | | |
| | 21 | | | | |
| For average learners | 22 | | | | |
| | 23 | | | | |
| | 24 | | | | |
| For advanced learners | 25 | | | | |
| | 26 | | | | |
| | 27 | | | | |
| For slow learners | 28 | | | | CO1 |
| | 29 | | | | |
| | 30 | | | | |
| For average learners | 31 | | | | |
| | 32 | | | | |
| | 33 | | | | |
| For advanced learners | 34 | | | CO2 | |
| | 35 | | | | |
| | 36 | | | | |
| For slow learners | 37 | | | | |
| | 38 | | | | |
| | 39 | | | | |
| For average learners | 40 | | | | |
| | 41 | | | | |
| | 42 | | | | |
| For advanced learners | 43 | | | | |
| | 44 | | | | |
| | 45 | | | | |
| For slow learners | 46 | | | CO3 | |
| | 47 | | | | |
| | 48 | | | | |
| | | | | | |


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 Amritsar.

Annexure-V

Student Centric Reform in the Internal Assessment w.e.f. Jul-Dec 2023

The internal assessment of theory courses through assignments has been made more students centric. Two comprehensive assignments of 48 questions each shall be prepared, uniformly covering all the **Course Outcomes** designated for the respective assignments. The questions for each CO shall be framed for three categories of students i.e. Slow learners, Medium learners and Advance learners. Accordingly, students of these three categories shall be assigned requisite number of questions as per existing pattern. This reform shall be applicable w.e.f. session Jul-Dec 2023.

| S. No. | Existing Pattern | Amended Pattern |
|--------|--|---|
| 1. | Two assignments per theory subject shall be taken from each student. | No Change |
| 2. | Weightage of each assignment shall be 24 marks. | No Change |
| 3. | Each assignment shall be framed to cover three Course Outcomes . | No Change |
| 4. | Each assignment to contain six short questions (2 marks each) and 3 medium questions (4 marks each) | Each comprehensive assignment shall contain 10 short questions (2 marks each) for each CO and 6 medium questions (4 marks each) for each CO. |
| 5. | All questions shall be compulsory | Students shall be assigned six short questions (2 marks each, 2 from each CO) and 3 medium questions (4 marks each, 1 from each CO) as per the learning capabilities of the individual student. |
| 6. | Total number of questions to be attempted shall be 9 (Nine). | No Change |
| 5. | Common mapping , as decided in the previous (10 th) meeting of Board of studies held on 13.07.2023, shall be adopted (as shown below) | No Change |

| Q. No. | Weightage | Assignment 1 | | | Assignment 2 | | |
|--------|-----------|--------------|-----|-----|--------------|-----|-----|
| | | CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
| 1 | 2 marks | ✓ | | | ✓ | | |
| 2 | 2 marks | ✓ | | | ✓ | | |
| 3 | 2 marks | | ✓ | | | ✓ | |
| 4 | 2 marks | | ✓ | | | ✓ | |
| 5 | 2 marks | | | ✓ | | | ✓ |
| 6 | 2 marks | | | ✓ | | | ✓ |
| 7 | 4 marks | ✓ | | | ✓ | | |
| 8 | 4 marks | | ✓ | | | ✓ | |
| 9 | 4 marks | | | ✓ | | | ✓ |

Upain
**Dean Academic Affairs,
Amritsar Group of Colleges,
Amritsar.**

Upain
Dr. Upain Kr Bhatia
Chairman, Board of Studies
Civil Engineering, AGC Amritsar

Amritsar Group of Colleges, Amritsar

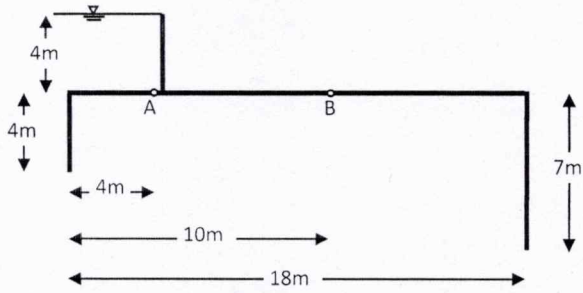
(Autonomus College)

Max. Marks = 24

B.Tech (Civil Engineering) - 7th Sem
IRRIGATION ENGINEERING - II (AGCE - 21702)
ASSIGNMENT - 1

| Q. No. | | CO |
|---------------------------------|--|-----|
| Section A (2 marks each) | | |
| 1 | How many divide walls can be provided in diversion headworks? | CO1 |
| 2 | What function is performed by under-sluice gates? | |
| 3 | Differentiate between Storage Headworks and Diversion Headworks. | |
| 4 | Identify the component of diversion headworks that prevents entry of silt into canal. | |
| 5 | What is the preferred location for providing a fish ladder in diversion headworks? | |
| 6 | Differentiate between weir and barrage. | |
| 7 | Which component of the diversion headworks can be removed without affecting the diversion efficiency of the structure? | |
| 8 | Differentiate between silt ejector and silt excluder on the basis of their purpose. | |
| 9 | Present the reasoning behind the optimum location of Silt Ejector. | |
| 10 | Differentiate between silt ejector and silt excluder on the basis of the location at which they are provided. | |
| 11 | What is one-man stone? | CO2 |
| 12 | Name different stages of river. | |
| 13 | What is the purpose of providing launching apron? | |
| 14 | What are the causes of failure of a weir? | |
| 15 | Present the optimum dimensions of launching apron laid on downstream side of a vertical drop weir. | |
| 16 | At what slope a launching apron is supposed to launch itself during a design flood event? | |
| 17 | Present brief specifications regarding one man stone. | |
| 18 | What is the purpose of providing crest shutters over the solid weir wall? Upto what height these shutters can be provided? | |
| 19 | Present the design criteria for top width and bottom width of a vertical drop weir. | |
| 20 | Why and how much the pond level is kept above the FSL of the offtaking canal? | |
| 21 | What is exit gradient? | CO3 |
| 22 | What is hydraulic gradient line? | |
| 23 | What is the basic difference between percolation and seepage? | |
| 24 | What distinction is made in Bligh's creep theory between horizontal and vertical creep? | |
| 25 | What corrections are generally made in Khosla's method of independent variables? | |
| 26 | Why it is necessary to provide sufficient thickness of the impervious floor below the hydraulic structures? | |
| 27 | How the piping failure can be prevented? | |
| 28 | Present the comparison between Bligh creep theory and Lanes weighted creep theory. | |
| 29 | How can you identify the key points used in Khosla's method of independent variables? | |
| 30 | In what direction the water seeps through the pores of a soil strata? | |
| Section B (4 marks each) | | |
| 31 | Draw the layout of a diversion headwork and explain the purpose of each of its components. | CO1 |
| 32 | Present the construction and working of a silt excluder with neat diagrams. | |
| 33 | Illustrate the working of a silt ejector. | |
| 34 | What roles are performed by a divide wall in a diversion headworks? | |
| 35 | What is the purpose of providing a fish ladder in a diversion headworks? Explain its working with suitable diagram. | |

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|----|--|-----|
| 36 | What silt control devices are used to control entry of silt from parent canal to offtake canal? Briefly mention their design considerations. | |
| 37 | Present the complete classification of weirs on the basis of material of construction. | |
| 38 | Draw the cross section of a vertical drop weir showing all its components. Briefly write about the functions of each component. | |
| 39 | Discuss various modes of failure of a weir due to surface and sub-surface flows. Also present the effects and remedies of such failures. | CO2 |
| 40 | Illustrate the step by step procedure of hydraulic calculations in design of vertical drop weir for fixing various elevations. | |
| 41 | How much velocity can be resisted by a 50kg stone of density 2.6g/cc placed used in Launching Apron? | |
| 42 | Discuss the design procedure for providing a launching apron with proper diagrams. | |
| 43 | Present a detailed description about the correction for floor thickness which is required to be applied to the pressure values obtained from Khosla's method of independent variables. | |
| 44 | Explain the basic assumptions made in Bligh's Creep Theory with suitable diagrams. | CO3 |
| 45 | What are the disadvantages of using Bligh's creep theory? Discuss in detail with suitable diagrams wherever required. | |
| 46 | By using Bligh's creep theory, calculate the residual pressure heads and floor thickness required at points A & B in the configuration given below.  | |
| 47 | Present a comparative analysis of the theories proposed by Bligh, Lane and Khosla. | |
| 48 | Design an impervious floor that supports a barrier to impound water upto 4m. The floor rests on natural river bed with creep coefficient of 9. | |

| CO | After going through this course, students must be able to |
|-----|---|
| CO1 | Understand functions of each component of diversion headwork and silt control devices. |
| CO2 | Design complete structure of a weir through understanding of its types, modes of failure and protection |
| CO3 | Apply the knowledge of various seepage theories to design the impervious floors for various hydraulic |
| CO4 | Understand and design canal regulation works. |
| CO5 | Understand and design canal falls and cross drainage works. |
| CO6 | Understand the concept of canal outlets. |

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Amritsar Group of Colleges, Amritsar

(Autonomus College)

Max. Marks = 24

B.Tech (Civil Engineering) - 7th Sem
IRRIGATION ENGINEERING - II (AGCE - 21702)
ASSIGNMENT - 2

| | Questions to be attempted | |
|---------------------------------|---|-----|
| Q. No. | Set 1: Attempt Q. No. 1,3,12,13,21,22,31,38 and 44 | CO |
| | Set 2: Attempt Q. No. 5,6,14,16,25,27,33,40 and 46 | |
| | Set 3: Attempt Q. No. 8,9,18,19,28,29,35,42 and 47 | |
| Section A (2 marks each) | | |
| 1 | What is an outfall channel? | CO4 |
| 2 | Which structure controls the safe regulation of canal network by removing surplus water? | |
| 3 | Differentiate between parent canal and offtake channel. | |
| 4 | Identify the purpose of providing a cross regulator on a canal. | |
| 5 | At what location a head regulator is provided with respect to a cross regulator? | |
| 6 | Differentiate between cross regulator and head regulator. | |
| 7 | Draw various offtake alignments generally used in canal networks. | |
| 8 | Present the design specifications regarding crest levels in cross regulator and head regulator. | |
| 9 | Present the specifications about connecting the crest levels with the upstream and downstream floors in cross regulator and head regulator. | |
| 10 | Identify the category of Canal Scouring Escape based on its structure and function. | |
| 11 | List the types of cross drainage works. | CO5 |
| 12 | Write the UPIRI formula for design of cistern. | |
| 13 | Write complete names of methods used to design transitions for cross drainage works. | |
| 14 | Identify the condition in which it is absolutely necessary to provide a canal fall. | |
| 15 | List down the functions performed by a canal fall. | |
| 16 | Provide any one formula for design of transition with complete nomenclature of the variables involved. | |
| 17 | Write and identify the sequence of steps involved in hydraulic design of cross drainage works. | |
| 18 | On what factor the shape of crest for Sarda Fall is decided? | |
| 19 | How does the length of barrel vary with different types of aqueducts? | |
| 20 | Present the general specifications for fluming of channel width in cross drainage works. | |
| 21 | What is a farm-turnout? | CO6 |
| 22 | Give two examples of semi-modular outlets. | |
| 23 | Give two examples of Rigid outlets. | |
| 24 | Write the relationship between sensitivity and flexibility of a canal outlet. | |
| 25 | What do you mean by a non-modular outlet? | |
| 26 | What is meant by flexibility of an outlet? | |
| 27 | Identify the category of a Pipe Outlet. | |
| 28 | Present a brief description about proportionality of a canal outlet. | |
| 29 | Which two requirements of a good canal outlet contradict each other? | |
| 30 | What is conceptually meant by setting of an outlet? | |
| Section B (4 marks each) | | |
| 31 | What functions are performed by cross regulator and head regulator in a canal system? | CO4 |
| 32 | Give the classification of canal escapes on the basis of their purpose. Draw appropriate diagrams of each type of such escapes. | |
| 33 | Draw the cross sectional diagrams of cross regulator and head regulator and indicate key differences between them. | |
| 34 | Present a brief description of various types of off-take alignments | |
| 35 | Discuss in brief the steps for designing a distributary head regulator. | |



| | | |
|----|--|-----|
| 36 | Under what conditions it becomes necessary to provide canal Escapes? Give the classification of canal escapes on the basis of their structural design. Draw appropriate diagrams of each type of such escapes. | |
| 37 | Explain various types of canal falls with the help of neat sketches. | |
| 38 | Discuss various types of cross drainage works with appropriate diagrams. | |
| 39 | Write a note on canal falls, their necessity, location and functions. | |
| 40 | A canal is having bed width of 20m. Design an expansion and contraction transitions using Chaturvedi formula for the canal if width of flumed portion is taken as 12m. Use 1m interval for calculations. | CO5 |
| 41 | Design contraction transition for top width using Mitra formula for a canal with bed width of 30m, flow depth as 1.5m and width of flumed portion as 18m. Use 2m interval for calculations. | |
| 42 | Do we have the freedom to decide a particular type of cross drainage works at a location? If yes, explain with illustrations. | |
| 43 | Discuss various requirements of a good canal outlet. Use appropriate diagram wherever needed. | CO6 |
| 44 | Give the classification of canal outlets with suitable description and diagrams. | |
| 45 | Describe mathematically the flexibility of an outlet in terms of setting of canal. | |
| 46 | Draw neat cross section and longitudinal section of a Pipe outlet. | |
| 47 | Derive the relationship between Flexibility and Sensitivity of an outlet. | |
| 48 | Explain the journey of water from a river to a field course for irrigation. Also present a brief description of various types of structural works it comes across. | |

| CO | After going through this course, students must be able to |
|-----|---|
| CO1 | Understand functions of each component of diversion headwork and silt control devices. |
| CO2 | Design complete structure of a weir through understanding of its types, modes of failure and protection |
| CO3 | Apply the knowledge of various seepage theories to design the impervious floors for various hydraulic |
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