



INDEX

UNIT I

Chapter 1 : Introduction to Irrigation and Hydrology

1-1 to 1- 43

Syllabus :

Irrigation and its Classification on the basis of purpose and surface.

Hydrology : Definition and Hydrological cycle.

Rain Gauge : Symons rain gauge, automatic rain gauge, Methods of calculating a verge rainfall : Arithmetic mean, Isohyetal, and Thiessen polygon method.

Runoff, Factors affecting Run off, Computation of run off.

Maximum flood Discharge measurement : Rational method and empirical methods. Simple numerical problems.

Yield and Dependable yield of a catchment determination of dependable yield.

1.1	Concept of Irrigation.....	1-1
1.1.1	Irrigation and its Necessity	1-1
1.1.2	Irrigation Engineering	1-2
1.2	Advantages of Irrigation	1-2
1.3	Disadvantages of Irrigation/ or III Effects of Irrigation	1-3
1.4	Classification of Irrigation or Types of Irrigation.....	1-3
1.5	Methods of Irrigation.....	1-4
1.5.1	Sub Surface Irrigation.....	1-4
1.5.2	Surface Irrigation.....	1-4
1.5.3	Overhead Irrigation.....	1-9
1.6	Types of Irrigation Project	1-9
1.6.1	Purpose Wise.....	1-10
1.7	Hydrology	1-10
1.7.1	Hydrological Cycle.....	1-10
1.7.1.1	Significance of Hydrological Cycle.....	1-11
1.8	Rainfall	1-12
1.8.1	Rain Gauge.....	1-12
1.8.2	Rain Gauge Station.....	1-12
1.9	Site Selection for Rain Gauge Station	1-12
1.9.1	Types of Rain Gauges.....	1-12
1.9.1.1	Non Recording Type	1-12
1.9.1.2	Recording Types	1-14
1.9.1.3	Various Sources of Errors While Recording Rainfall.....	1-17

1.10	Terminology used in Hydrology	1-17
1.10.1	Rainfall Intensity.....	1-17
1.10.2	Average Rainfall.....	1-17
1.10.3	Annual Rainfall.....	1-17
1.10.4	Average Annual Rainfall (P)	1-17
1.10.5	Monsoon Rainfall	1-17
1.10.6	Average Monsoon Rainfall	1-17
1.10.7	Average, Good and Bad Years.....	1-18
1.11	Method for Finding out Average Annual Rainfall of a Catchment.....	1-18
1.11.1	Arithmetic Average (Mean) Method	1-18
1.11.2	Thiessen's Polygon Method / Representative Area Method.....	1-18
1.11.3	Isohyetal Method.....	1-19
1.12	Runoff	1-20
1.12.1	Factors Affecting Runoff.....	1-20
1.12.2	Catchment Area	1-21
1.12.3	Calculation of Runoff.....	1-21
1.12.3.1	Inglis Method.....	1-21
1.12.3.2	Strange Curves	1-21
1.12.3.3	Runoff Coefficient.....	1-22
1.12.3.4	Binnie's Percentage	1-23
1.13	Maximum Flood Discharge (MFD).....	1-23
1.13.1	Factors Affecting Maximum Value of (MFD)	1-23
1.13.2	Methods of Estimation of MFD	1-23
1.13.3	From Past Records	1-24
1.13.4	River Gauging	1-24
1.14	Yield.....	1-25
1.14.1	Dependable Yield.....	1-25
1.15	Solved Examples	1-25
1.16	MSBTE Questions and Answers	1-40

UNIT II

Chapter 2 : Crop Water Requirement and Reservoir

Planning

2-1 to 2-52

Syllabus :

Crop Water Requirement : Cropping seasons, crop period, base period, Duty, Delta, CCA, GCA, intensity of irrigation, factors affecting duty, Problems on water requirement and capacity of canal



<p>Methods of application of irrigation water and its assessment.</p> <p>Surveys for irrigation project, data collection for irrigation project.</p> <p>Area capacity curve.</p> <p>Silting of reservoir : Rate of silting, factors affecting silting and control measures.</p> <p>Control levels in reservoir.</p> <p>Simple numerical problems on Fixing control levels.</p>	<p>2.15.3 Full Tank Level (FTL) 2-29</p> <p>2.15.4 Lowest Water Level (LWL) 2-29</p> <p>2.15.5 Dead Storage 2-29</p> <p>2.15.6 Live Storage 2-29</p> <p>2.15.7 Gross Storage 2-29</p> <p>2.15.8 Free Board 2-29</p> <p>2.15.9 Parent Stream 2-29</p> <p>2.16 Fixing Control Levels 2-30</p> <p>2.16.1 Procedure 2-30</p> <p>2.16.2 Fixing LWL 2-30</p> <p>2.16.3 Fixing FTL 2-30</p> <p>2.17 Area Elevation / Area-Capacity Curve 2-31</p> <p>2.17.1 Water Spread Area 2-32</p> <p>2.18 Command Area Survey 2-32</p> <p>2.19 Procedure for Command Area Survey 2-32</p> <p>2.20 Project Report 2-33</p> <p>2.21 Solved Example 2-33</p> <p>2.22 MSBTE Questions and Answers 2-47</p>
UNIT III	
Chapter 3 : Dams and Spillways 3-1 to 3-46	
<p>Syllabus :</p> <p>Dam and its classification : Earthen dams and Gravity dams (masonry and concrete).</p> <p>Earthen Dams : Components with function, typical cross section, seepage through embankment and foundation and its control.</p> <p>Methods of construction of earthen dam, types of failure of earthen dam and preventive measures.</p> <p>Gravity Dams : Forces acting on dam, Theoretical and practical profile, typical cross section. Drainage gallery, joints in gravity dam, concept of high clam and low dam.</p> <p>Spillways : Definition, function, location and components.</p> <p>Emergency and service spillway-ogee spillway and bar type spillway, discharge over spillway. Energy dissipation, Spillway with and without gates.</p> <p>Gates : Radial and Vertical</p>	



3.1	Dams and Spillways	3-1	3.10.4	Types of Repairs and Maintenance for an Earthen Dam	3-31
3.1.1	Site Selection for Dams.....	3-1	3.11	Spillways.....	3-31
3.1.2	Factors Affecting the Selection of the Type of Dam.....	3-2	3.11.1	Location of Spillway.....	3-31
3.2	Gravity Dams	3-2	3.11.2	Essential Requirement of Spillway	3-32
3.2.1	Forces Acting on a Gravity Dam.....	3-2	3.11.3	Factors Affecting Spillway Capacity.....	3-32
3.3	Theoretical / Elementary Profile	3-4	3.11.4	Component Part of Spillway	3-32
3.4	Practical Profile	3-5	3.12	Types of Spillways	3-33
3.4.1	Difference between Theoretical and Practical Profile of Gravity Dam	3-5	3.12.1	Emergency Spillway	3-33
3.5	Low Dams and High Dams.....	3-6	3.12.2	Service Spillways	3-33
3.6	Galleries in Gravity Dam	3-7	3.12.3	Ogee Spillway	3-34
3.6.1	Foundation Gallery (Drainage Gallery)	3-8	3.12.4	Bar Spillway	3-34
3.6.2	Inspection Gallery	3-9	3.12.5	Comparison Between Emergency Spillway and Main Spillway	3-35
3.7	Joints in Gravity Dam	3-9	3.13	Control of Seepage through Embankment and Foundation	3-35
3.7.1	Construction Joints.....	3-9	3.13.1	Control of Seepage through Embankment.....	3-35
3.7.2	Expansion and Contraction Joints	3-9	3.13.2	Control of Seepage through Foundation.....	3-36
3.7.3	Transverse Joint.....	3-9	3.14	Spillway Gates	3-36
3.7.4	Longitudinal Joint	3-10	3.14.1	Non Automatic Gates	3-37
3.7.5	Keys and Water Stops	3-10	3.14.2	Automatic Gate	3-38
3.7.6	Various Stages in the Construction of Gravity Dam	3-10	3.15	Energy Dissipators	3-39
3.7.7	Equipments and Machinery Required for Construction of Gravity Dam :	3-11	3.16	Solved Example	3-40
3.8	Differentiation between Gravity Dam and Earthen Dam :	3-22	3.17	MSBTE Questions and Answers	3-42
3.9	Earthen Dam.....	3-23			
3.9.1	Construction of Earthen Dam	3-23			
3.9.2	Typical Section of Earthen Dam	3-24			
3.9.3	Criteria for Safe Design of Earthen Dam	3-26			
3.10	Failure of Earthen Dam	3-26			
3.10.1	The Failure of Earthen Dams may be Grouped into Following Categories	3-26			
3.10.2	Seepage.....	3-27			
3.10.2.1	Seepage Line	3-28			
3.10.2.2	Seepage Failure.....	3-28			
3.10.3	Structural Failure.....	3-29			

UNIT IV**Chapter 4 : Minor and Micro Irrigation****4-1 to 4-24****Syllabus :**

Bandhara irrigation : Layout components, construction and working, solid and open bandhara.

Percolation Tanks : Need selections of site.

Lift irrigation scheme : Components and their functions, layout.

Drip and Sprinkler Irrigation : Need, components, Layout, operation and Maintenance.

Farm ponds, Jalayukt shivar schemes.

Well irrigation : Types of wells, yield of well, advantages and disadvantages of well irrigation



4.1	Introduction	4-1	4.15.2	Maintenance.....	4-13
4.1.1	Bandhara Irrigation.....	4-1	4.15.3	Operation	4-13
4.2	Advantages of Bandhara Irrigation	4-1	4.15.4	Layout of Sprinkler System	4-14
4.3	Disadvantages of Bandhara Irrigation.....	4-2	4.15.5	Merits and Demerits of Sprinkler Irrigation.....	4-16
4.4	Site Selection for Bandhara.....	4-2	4.15.6	Sprinkler Irrigation.....	4-16
4.5	Component Parts and Layout.....	4-3	4.16	Drip Irrigation.....	4-17
4.6	Bandhara and Scour Hole	4-3	4.16.1	Components and its Function.....	4-17
4.6.1	Scour Hole	4-3	4.16.2	Operation	4-18
4.6.2	Kolhapur Type or Open Bandhara.....	4-4	4.16.3	Maintenance.....	4-18
4.6.3	Temporary Bandhara	4-4	4.16.4	Layout of Drip Irrigation System	4-18
4.6.4	The Screen Wall and Outlet	4-4	4.16.5	Advantage of Drip Irrigation.....	4-19
4.6.5	The Flood Bank.....	4-4	4.16.6	Differentiation Between Drip irrigation and Sprinkler irrigation	4-21
4.6.6	Differentiate Between Solid and Open Bandhara.....	4-5	4.17	MSBTE Questions and Answers	4-22
4.7	Percolation Tanks	4-5		UNIT V	
4.7.1	Component and Construction.....	4-5			
4.7.2	Advantages of Percolation Tank.....	4-6		Chapter 5 : Diversion Head Work	5-1 to 5-16
4.7.3	Disadvantages of Percolation Tank.....	4-6		Syllabus :	
4.8	Site Selection for Percolation Tank	4-7		Weirs : Components parts, types. K.T. weir – components and construction.	
4.9	Lift Irrigation	4-7		Diversion head works : layout, components and their function.	
4.9.1	Advantages of Lift Irrigation System.....	4-7		Barrages : Components and their functions. Difference between weir and Barrage.	
4.9.2	Disadvantages of Lift Irrigation	4-8			
4.9.3	Necessity	4-8			
4.10	Lifting of Water from River.....	4-8	5.1	Diversion Head Work	5-1
4.10.1	Lifting of Water from Canal.....	4-8	5.1.1	Location of Diversion Head Work.....	5-1
4.10.2	Lifting of Water from Well.....	4-8	5.1.2	Ideal Site for Diversion Head Work	5-1
4.11	Component Parts of Lift Irrigation.....	4-9	5.2	Layout of Diversion Head Work.....	5-2
4.11.1	Economical Feasibility of Lift Canal Irrigation	4-10	5.2.1	Weir and Barrage	5-2
4.11.2	Selection of Pumps	4-10	5.2.1.1	Types of Weirs	5-3
4.12	Points to be Considered while Design of Lift from Canals.....	4-11	5.3	Classification of Weirs.....	5-4
4.13	Differentiation between Lift Irrigation and Canal Irrigation	4-11	5.3.1	Use and Function	5-4
4.14	Irrigation Department Standard Design and Specification Design Criteria	4-11	5.3.2	Under Sluice	5-6
4.15	Sprinkler Irrigation System	4-12	5.3.3	Divide Wall	5-6
4.15.1	Components and its Function.....	4-12	5.3.4	Fish Ladder	5-7
			5.3.5	Silt Exclusion Devices	5-8
			5.3.6	Silt Ejectors	5-8



5.3.7	Silt Excluder	5-8
5.3.8	Guide Bank	5-9
5.3.9	Marginal Embankment	5-9
5.3.10	Scouring Sluice	5-9
5.3.11	Head Regulator	5-9
5.3.12	Stilling pond	5-10
5.4	Component Parts of Weir.....	5-10
5.5	Barrage	5-11
5.5.1	Advantages of Barrage.....	5-12
5.5.1(A)	Disadvantages of Barrage.....	5-12
5.5.2	Differentiation Between Weir and Barrage.....	5-12
5.5.3	Comparison Between Diversion head work and Storage head works.....	5-13
5.6	MSBTE Questions and Answers	5-14

UNIT VI

Chapter 6 : Canals

6-1 to 6-48

Syllabus :

Canals : Classification according to alignment and position in the canal network, Cross section of canal in embankment and cutting, partial embankment and cutting, balancing depth. Design of most economical canal section.

Canal lining : Purpose, material used and its properties, advantages.

CD works : Aqueduct, siphon aqueduct, super passage, level crossing.

Canal regulators : Head regulator, cross regulator, Escape, Falls and outlets.

Canal maintenance.

6.1	Canals.....	6-1
6.2	Canal Alignment.....	6-1
6.2.1	Contour Canals	6-1
6.2.2	Ridge Canal / Ridge Alignment.....	6-2
6.2.3	Side Slope Canals.....	6-3
6.2.4	Compare between Contour Canal and Ridge Canal	6-3
6.2.5	Canal Network.....	6-3

6.3	Parts of Canal System	6-4
6.3.1	Main Canal.....	6-4
6.3.2	Branch Canal	6-4
6.3.3	Major Distributor (Rajbaha)	6-4
6.3.4	Minor Distributor / Minor	6-4
6.3.5	Water Courses / Field Channels.....	6-5
6.3.6	Head Work.....	6-5
6.3.7	Fixing Alignment of Canals.....	6-5
6.3.7.1	Cross-Section of Canal in, Filling and in Partial Cutting and Filling	6-5
6.4	Canal Lining	6-6
6.5	Purpose of Canal Lining	6-6
6.6	Advantages or Merits of Canal Lining	6-7
6.7	Disadvantages or Demerits of Lining.....	6-8
6.8	Properties of Good Canal Lining Material	6-8
6.9	Balancing Depth of Canal.....	6-9
6.10	Hydraulic Design	6-10
6.10.1	Bed Slope	6-10
6.10.2	Critical Velocity Ratio	6-10
6.10.3	Coefficient of Rugosity (N)	6-10
6.10.4	Side Slope for Design.....	6-10
6.10.5	Design Procedure	6-10
6.11	For Lined Canals.....	6-11
6.12	Solved Examples	6-11
6.13	Types of Canal Lining.....	6-25
6.13.1	Cement or Lime Concrete Lining.....	6-25
6.13.2	Cement Mortar Lining.....	6-26
6.13.3	Stone Masonry Lining.....	6-26
6.13.4	Brick Lining	6-26
6.13.5	Shotcrete Lining	6-26
6.13.6	Asphaltic Lining	6-26
6.13.7	Precast Concrete Block Lining	6-26
6.13.8	Sodium Carbonate Lining.....	6-26
6.13.9	Maintenance Works for Canals	6-26



6.14	Selection of Suitable Type of C.D. Work.....	6-27	6.19	Canal Outlets.....	6-37
6.14.1	Cross Drainage Work (CD Works).....	6-27	6.20	Requirement of a Good Canal Outlet.....	6-38
6.15	Classification or Types of Cross Drainage Work OR Types of CD Works.....	6-28	6.21	Types of Outlets	6-38
6.15.1	Aqueduct	6-28	6.21.1	Non Modular Outlet	6-38
6.15.2	Super Passage.....	6-30	6.21.2	Semimodular Outlet.....	6-38
6.15.3	Level Crossing.....	6-31	6.21.3	Modular Outlet.....	6-39
6.15.4	Inlet and Outlet	6-32	6.22	Canal Regulation Work.....	6-39
6.15.5	Difference between Aqueduct and Siphon Aqueduct	6-32	6.22.1	Difference between Head Regulator and Cross Regulator	6-40
6.15.6	Compare between Aqueduct and Super Passage	6-32	6.23	Canal Maintenance.....	6-40
6.16	Canal Falls and Rapids.....	6-36	6.24	Water Logging	6-41
6.17	Escapes	6-36	6.24.1	Effects of Water Logging	6-41
6.17.1	Scouring Escape	6-37	6.24.2	Causes of Water Logging	6-42
6.17.2	Surplus Escape	6-37	6.24.3	Prevention of Water Logging	6-43
6.17.3	Tail Escape	6-37	6.25	MSBTE Questions and Answers.....	6-45
6.18	Cross Regulator.....	6-37		➤ Appendix A : Solved MSBTE Question Paper of Winter 2019	A-1 to A-3

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