

1. Group - A (Short and Answer Questions)

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
UNIT-I STORAGE WORKS			
1	Give the classification of reservoirs.	Remember	a
2	Discuss the steps involved in selecting a site for reservoir construction.	Understand	a
3	Write brief notes on reservoir yield.	Remember	a
4	Explain various levels of a reservoir with neat sketch.	Analyze	a
5	Write short notes on mass curve and demand curve	Understand	a
6	Explain how reservoir capacity can be determined using a mass curve.	Remember	a
7	What is meant by reservoir sedimentation	Remember	a
8	Give the description of life of reservoir	Remember	a
9	What is the use of constructing dam.	Understand	a

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
10	Give the classification of dams.	Remember	b
UNIT-II GRAVITY DAMS			
1	Explain the forces acting on a gravity dam.	Understand	c
2	Draw an elementary profile of a gravity dam.	Remember	c
3	Draw the practical profile of a gravity dam.	Analyze	c
4	Write the effects of earthquake forces on a gravity dam.	Analyze	c
5	Explain the failure of a gravity dam due to overturning.	Understand	c
6	Explain the failure of a gravity dam due to sliding.	Analyze	c
7	Explain the failure of a gravity dam due to crushing.	Remember	c
8	Derive the limiting height of a gravity dam.	Analyze	c
9	What are the modifications given to an elementary profile to get practical profile?	Analyze	c
10	Explain the effect of wave pressure on gravity dam.	Remember	c
UNIT-III EARTH DAMS			
1	What are the types of embankment dams?	Understand	d
2	Explain various earth dams classified based on the materials used	Analyze	d
3	Explain various types of earth dams classified based on methods of construction.	Remember	d
4	Explain the hydraulic failures of earth dams.	Analyze	d
5	Explain seepage failures of earth dams.	Remember	d
6	Explain the structural failures of earth dams	Analyze	d
7	Give brief description of phreatic line of an earth dam.	Understand	d
8	Write the criteria for safe design of earth dams.	Understand	d
9	Write short notes on rolled type earth dams.	Understand	d
10	Write short notes on zoned type earth dams.	Remember	d
UNIT-IV SPILLWAYS			

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
1	What is the purpose of providing a spill way to the dam structure?	Understand	e
2	What are the essential requirements of a spillway?	Analyze	e
3	What are the factors affecting spillway capacity?	Analyze	e
4	What are the components of a spillway?	Analyze	e
5	Give the classification of spillway based on purpose.	Understand	e
6	Give the classification of spillway based on control	Remember	e
7	Give the classification of spillway based on pertinent feature.	Remember	e
8	Explain free over fall spillway with neat sketch.	Understand	e
9	Explain ogee-shaped spillway.	Understand	e
10	Explain siphon spillway.	Remember	e
UNIT-V DIVERSION HEADWORKS			
1	Give a brief note on diversion headwork.	Understand	f
2	Distinguish between weir and a barrage.	Understand	f
3	Give the classification of weirs.	Analyze	f
4	Draw a neat sketch of layout of a diversion headwork.	Remember	f
5	Mention various components of a diversion headwork.	Understand	f
6	Explain the functions of canal head regulator.	Remember	f
7	Give the necessity of providing silt excluder.	Understand	f
8	What is the purpose of providing a divide wall in a diversion headwork?	Remember	f
9	Give the necessity of providing silt ejector inside a canal..	Understand	f
10	What are guide banks and marginal banks?	Understand	f
UNIT-VI WEIRS ON PERMEABLE FOUNDATIONS			
1	Explain Bligh's creep theory.	Understand	g
2	Discuss utility and limitations of Khosla's theory.	Understand	g
3	Explain the design of a weir on permeable foundations for surface flow	Understand	g

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
4	State the fundamental difference between Khosla's theory and Bligh's creep theory for seepage of flow below weir.	Analyze	g
5	What is Khosla's theory? How it is used?	Remember	g
6	Explain the criteria adopted in designing various components of weir built on permeable foundations using Khosla's theory.	Analyze	g
7	Distinguish between Bligh's creep theory and Khosla's theory.	Understand	g
8	What is sub surface flow?	Analyze	g
9	Explain the criteria adopted in designing various components of weir built on permeable foundations using Bligh's creep theory.	Analyze	g
10	Discuss the limitations and anomalies of Bligh's creep theory.	Analyze	g
UNIT-VII CANAL FALLS			
1	What are the different types of cross drainage works necessary on canal alignment?	Analyze	h
2	What do you understand by the term level crossing?	Understand	h
3	Explain the necessity of cross drainage structure.	Understand	h
4	Explain various types of cross drainage works.	Understand	h
5	What is a cross drainage work?	Analyze	h
6	How would you select suitable type of cross drainage work?	Remember	h
7	Explain super passage in detail with neat sketch.	Remember	h
8	What is an aqueduct? Explain with neat sketch.	Remember	h
9	Write short notes on siphon aqueduct.	Remember	h
10	Write short notes on canal siphon.	Remember	h
UNIT-VIII CROSS DRAINAGE WORKS			
1	What is meant by the terms flexibility, setting and sensitivity as applied to modules?	Remember	h
2	What is meant by canal regulation?	Remember	h
3	What are modules? What are the requirements of good module?	Remember	h

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
4	Enumerate different types of outlets which are in common use on canal projects.	Remember	h
5	What is a head regulator?	Analyze	h
6	List out various functions of a distributory head regulator.	Analyze	h
7	Define the terms proportionality and sensitivity.	Analyze	h
8	What are the functions of head regulator?	Remember	h
9	What are the functions of cross regulator?	Analyze	h
10	Distinguish between a modular, a non modular and a semi modular outlet.	Analyze	h

2. Group - II (Long Answer Questions)

S. No	Question	Blooms Taxonomy Level	Course outcome
UNIT-I STORAGE WORKS			
1	Explain the following terms, (i) Catchment area (ii) Normal pool level (iii) Maximum pool level (iv) Minimum pool level.	Remember	a
2	Explain the different types of storages in a reservoir with the help of neat sketch.	Remember	a
3	Explain the mass curve method that can be used for determining : (a) Reservoir capacity for fulfilling given demand (b) Demand rate from a reservoir of a given capacity.	Understand	b
4	Given the specific yield, describe the procedure for estimating the reservoir capacity using mass inflow and demand curves.	Understand	b
5	How is the capacity of reservoir fixed based on a specific yield? Also explain how safe yield of a reservoir is obtained for a given capacity.	Remember	a
6	What is meant by reservoir sedimentation and life of a reservoir?	Remember	a
7	Give the classification of reservoirs.	Understand	b
8	Write short notes on gravity dam and buttress dam.	Remember	a

S. No	Question	Blooms Taxonomy Level	Course outcome
9	Discuss the steps involved in selecting a site for reservoir construction.	Understand	b
10.	Explain the procedure to determine reservoir capacity using a mass curve.	Analyze	c
UNIT-II GRAVITY DAMS			
1	Define the following parameters with respect to the gravity dam, (a) Dam base line (b) Structural height (c) Length of the dam (d) Hydraulic height.	Analyze	c
2	Write detailed notes on elementary and practical profiles of gravity dams.	Understand	c
3	Enumerate various methods of stability analysis of gravity dam. Explain any two of them.	Understand	c
4	A concrete gravity dam 20 m is height has top width 6 m and free board 2.5 m, upstream face is vertical, while downstream face has a slop of 0.6 H:1 V right from top to bottom. Check the stability of the dam. Take specific weight of concrete as 2.4 t/m ³ consider full uplift. There is no tail water. Assume any other data not given.	Analyze	c
5	Describe single step method for design of gravity dam.	Analyze	c
6.	Derive limiting height of a gravity dam	Analyze	c
7	Write the effects of earthquake forces on a gravity dam.	Analyze	c
8	Explain the failure of a gravity dam due to crushing.	Remember	c
9	What are the modifications given to an elementary profile to get practical profile?	Analyze	c
10	Explain the forces acting on a gravity dam.	Understand	c
UNIT-III EARTH DAMS			
1	Explain earth dams with neat sketch.	Remember	d
2	Write short notes on, (a) Hydraulic failures of earthen dams (b) Significance of pore pressure in relation to earthen dam construction (c) Slope protection in earthen dams (d) Filters in earthen dams.	Analyze	d

S. No	Question	Blooms Taxonomy Level	Course outcome
3	Write briefly about overtopping ,wave erodin and piping phenomenon in earthen dams.	Remember	d
4	Explain the design criteria for dams.	Analyze	d
5	What is phreatic line ? Explain its significance in earthen dams.	Remember	d
6	Explain the structural failures of earth dams	Analyze	d
7	Give brief description of phreatic line of an earth dam.	Understand	d
8	Write the criteria for safe design of earth dams.	Understand	d
9	Write short notes on rolled type earth dams.	Understand	d
10	Write short notes on zoned type earth dams.	Remember	d
UNIT-IV SPILLWAYS			
1	What are the requirements of spillways ? What are the factors which affect the spillway capacity ? Explain various components of spillway briefly.	Remember	e
2	List any eight qualities of a good siphon.	Analyze	e
3	Write short notes on, (a) Straight drop spillway (b) Side channel spillway (c) Ogee spillway (d) Priming device for siphon spillway	Understand	e
4	Given the classification of spillways gates. Explain each type of gate brief	Remember	e
5	Draw the neat sketch of USBR drum gate mention its salient features.	Analyze	e
6	Give the classification of spillway based on pertinent feature.	Remember	e
7	What are the factors affecting spillway capacity?	Analyze	e
8	Explain ogee-shaped spillway.	Understand	e
9	Explain siphon spillway.	Remember	e
10	Write about hydraulic jump.	Understand	e
UNIT-V DIVERSION HEADWORKS			
1	What is the difference between diversion headworks and a storage	Understand	f

S. No	Question	Blooms Taxonomy Level	Course outcome
	headworks (dam) ? What considerations will you		
2	Explain clearly the difference between barrage weir.	Remember	f
3	Write a short notes on the following, (a) Dropping shutters. (b) Stop logs Also draw the relevant sketches.	Remember	f
4	Explain different causes of weirs or barrages on the regimes of river.	Remember	f
5	Explain the functions of various components of a diversion work.	Understand	f
6	Explain the functions of canal head regulator.	Remember	f
7	Give the necessity of providing silt excluder.	Understand	f
8	What is the purpose of providing a divide wall in a diversion headwork?	Remember	f
9	Give the necessity of providing silt ejector inside a canal..	Understand	f
10	What are guide banks and marginal banks?	Understand	f
UNIT-VI			
WEIRS ON PERMEABLE FOUNDATIONS			
1	Discuss utility and limitations of Khosla's theory.	Remember	g
2	Discuss khosla's theory for design of weir on permeable foundations. Enumerate the various corrections that are needed in its application.	Analyze	g
3	Compute the uplift pressure based on Bligh's theory.	Analyze	g
4	Explain the design criteria of weir on permeable foundations according to Bligh's creep theory.	Analyze	g
5	Why exit gradient is provided and how it can be determine.	Analyze	g
6	Explain the criteria adopted in designing various components of weir built on permeable foundations using khosla's theory.	Analyze	g
7	Distinguish between Bligh's creep theory and Khosla's theory.	Understand	g
8	What is sub surface flow?	Analyze	g
9	Explain the criteria adopted in designing various components of weir built on permeable foundations using Bligh's creep theory.	Analyze	g
10	Discuss the limitations and anomalies of Bligh's creep theory.	Analyze	g
UNIT-VII			

S. No	Question	Blooms Taxonomy Level	Course outcome
CANAL FALLS REGULATION WORKS			
1	Explain the procedure for the design of trapezoidal notch fall.	Analyze	h
2	Describe the procedure for the design of a straight glacis fall when it is, (i) Unflumed and non-metered (ii) Flumed and metered.	Remember	h
3	Data refer to fall site, full supply discharge $u/s/d/s = 50$ cumecs, bed width $u/s/d/s = 28$ m, full supply level $u/s/d/s = 150/148.50$, bed level $u/s/d/s = 148/146.5$. what type of fall would you recommend for this canal. Design cistern of fall.	Analyze	h
4	What are the functions of distributor head regulator and cross-regulator.	Analyze	h
5	Define outlet. What are the essential requirement of a good outlet ?	Remember	h
6	How would you select suitable type of cross drainage work?	Remember	h
7	Explain super passage in detail with neat sketch.	Remember	h
8	What is an aqueduct? Explain with neat sketch.	Remember	h
9	Write short notes on siphon aqueduct.	Remember	h
10	Write short notes on canal siphon.	Remember	h
UNIT-VIII CROSS DRAINAGE WORKS			
1	Explain the necessity of a cross-drainage structure how do you classify cross-drainage works.	Understand	h
2	What points will you consider while selecting the site of a cross-drainage work.	Analyze	h
3	What points will you consider while selecting of a cross-drainage work.	Remember	h
4	Discuss the methods for the estimation of the design discharge and waterway for a drainage of an aqueduct.	Remember	h
5	State how will you determine, (i) Contraction of canal waterway (ii) Waterway for the drain, and (iii) Thickness of floor for the drain in the transition reach in case of a siphon aqueduct	Remember	h
6	List out various functions of a distributory head regulator.	Analyze	h
7	Define the terms proportionality and sensitivity.	Analyze	h
8	What are the functions of head regulator?	Remember	h
9	What are the functions of cross regulator?	Analyze	h

S. No	Question	Blooms Taxonomy Level	Course outcome
10	Distinguish between a modular, a non modular and a semi modular outlet.	Analyze	h