University of Mumbai

Program: **Civil Engineering**
Curriculum Scheme: Rev 2019
Class: TE Semester VI
Course Code: CEC602   and Course Name: Water Resources Engg
SAMPLE QUESTION BANK

1)	Kharif crops are also called as
a	Winter crops
b	**Monsoon crops**
c	Spring crops
d	One month crops
2)	Which of the following is not an ill effect of irrigation,
a	**Generation of hydro-electric power**
b	Breeding places for mosquitoes
c	Damp climate
d	Water logging
3)	In which method of flooding, water in an irrigational field flows in a circuitous manner to reach dead end ?
a	Contour Farming Method
b	Border-Strip Method
c	Ring-Basin Method
d	**Zig-zag Method**
4)	What is the other name of Flood Irrigation
a	Flow Irrigation
b	Lift Irrigation
c	Surface Irrigation
d	**Uncontrolled Irrigation**
5)	The duty of irrigation water will be less if
a	area irrigated is more
b	water supply required is less
c	**water supply required is more**
d	area irrigated is less
6)	The first watering before sowing the crop is known as
a	kore waterng
b	**paleo**
c	delta
d	duty

7)		The method which involves levying charges on actual volume of water supplied is known as
a		**Volumetric assessment**
b		Seasonal assessment
c		Area basis assessment
d		Permanent assessment
8)		Precipitation caused by lifting of an air mass due to the pressure difference, is called
a		**cyclonic precipitation**
b		convective precipitation
c		orographic precipitation
d		orographic frontal precipitation
9)		The surface Run-off is the quantity of water
a		absorbed by soil
b		intercepted by buildings and vegetative cover
c		required to fill surface depressions
d		**that reaches the stream channels**
10)		A hyetograph is a graphical representation of
a		**Rainfall intensity and time**
b		Rainfall depth and time
c		Discharge and time
d		Cumulative rainfall and time
11)		The process by which water enters the small pore spaces between particles in soil or rocks is
a		transpiration
b		**inflitration**
c		precipation
d		sublimation
12)		The boundary between the saturated zone and the unsaturated zone is called the
a		**water table**
b		aquifer
c		aquiclude
d		porosity
13)		Dupuit's assumptions are valid for
a		artesian aquifer
b		confined aquifer
c		leaky aquifer

d	**unconfined aquifer**
14)	The 'useful storage ' in a dam reservoir is the volume of water stored between:
a	minimum and maximum reservoirs levels
b	**minimum and normal reservoirs levels**
c	normal and maximum reservoirs levels
d	maximum and bed level in the reservoirs levels
15)	The 'dead storage ' in adam reservoir is the volume of water stored between:
a	**bed level of the reservoir and minimum reservoirs levels**
b	bed level of the reservoir and the silt level in the reservoirs levels
c	bed level of the reservoir and the normal pool level
d	bed level of the reservoir and the maximum reservoir level
16)	The water stored in a reservoir below the minimum pool level is called :
a	valley storage
b	bank storage
c	surcharge storage
d	**dead storage**
17)	Stability of the gravity dam with a vertical upstream face mainly depends on
a	Uplift pressure
b	Upstream water pressure
c	**Weight of the Dam**
d	Tail water pressure
18)	If the permissible strength of concrete = 2500 KN/m², Sc = specific gravity of concrete = 2.4, what is the maximum height of the low gravity dam?
a	**73m**
b	10 m
c	88 m
d	78 m
19)	The profile of phreatic line for homogeneous earthen dam is ….
a	Circular
b	Elliptical
c	**Parabola**
d	No shape
20)	Which of the following is seepage mode of failure of earthen dam
a	U/S failure
b	**seepage through foundation and embankment**

c	Settlement
d	Overturning
21)	One of the necessity of Canal Lining is
a	Decrease discharge in canal section
b	**Minimize seepage loss**
c	Increase maintenance of Canal
d	Allow erosion of bed
22)	Any structure constructed to regulate the discharge, full supply level or velocity in a canal is known as
a	Revolution Work
b	Representing Work
c	**Regulation Work.**
d	Recurring Work
23)	A _____ is an irrigation structure constructed across a canal to lower down the surplus energy liberated from the falling water.
a	Canal Escape
b	**Canal Fall**
c	Canal Regulator
d	Canal Outlet
24)	_____ is a small structure built at head of the water course so as to connect it with minor or distributary channel.
a	**Canal Outlet**
b	Canal Escape
c	Canal Regulator
d	Canal Distribution
25)	Irrigation canals carrying water from headwork to crop fields have to cross few natural drainage streams, in-order to cross this safely the structures that are constructed are called as _____
a	**Cross Drainage Work**
b	Cut Drainage Work
c	Current Drainage Work
d	Soft Drainage Work
26)	One amongst the following is Canal ESCAPE
a	Cutting Escape
b	**Scouring Escape**
c	Unbalanced Escape
d	Balanced Escape

27)	For a channel section, if discharge Q = 30 cumec and silt factor is 1 using Lacey's theory calculate the velocity of flow required in the channel	
a	**0.773 m/sec**	
b	1.773 m/sec	
c	0.773 cm/sec	
d	1.773 cm/sec	
28)	According to Lacey's, what is the proposed shape of regime channel??	
a	**Semi-elliptical**	
b	Circular	
c	Rectangular	
d	Hyper-bolic	
29)	For no tension to be develop in the gravity dam the resultant of all the external forces should always lie	
a	at the center of the base	
b	**within the middle third portion of the base**	
c	within the d/s third portion	
d	with In the u/s third portion	
30)	For no tension to be develop in the gravity dam the eccentricity of the resultant force should be	
a	<b/3	
b	<b/4	
c	**<b/6**	
d	<b/12	

Sr. No	Questions - 5 MARKS EACH
1	Write a short note on National Water Policy
2	Enlist and explain in brief ill-effects of irrigation
3	Explain in detail with a neat sketch about Bandhara Irrigation.
4	Explain in detail about sprinkler irrigation. Also mention advantages and disadvantages of Sprinkler Irrigation.
5	What do you understand by Crop Rotation. Mention advantages of Crop Rotation
6	Discuss various methods of assessment of irrigation water.
7	With a neat sketch explain hydrological cycle in detail.
8	Explain any one type of Automatic rain guage instrument with sketch.
9	State the equation for Darcy's law. Also mention the assumptions related to Darcy's Law
10	Explain in detail with a neat sketch different Zones of Storage of Reservoirs
11	Explain in detail about Galleries and different types of galleries in dam.

12	Define Spillway in a dam. Mention functions of Spillways.
13	What do you understand by Canal Lining. Mention different materials used for Canal Lining
14	Explain in detail about Canal Escapes and different types of Canal Escapes.
15	Write about Seepage Failures in Earthen Dam.

Sr. No	QUESTIONS - 10 MARKS EACH
1	Define Surface Irrigation. Explain Surface Irrigation (Classification) in brief with neat sketches.
2	Explain the terms Delta and Duty of crops. Find relationship between delta and duty. An irrigation canal has GCA = 80000 hectares out of which 85% is culturable area. The intensity of irrigation of Kharif Crops = 30% and for Rabi Crops = 60%. Find discharge required at the head of canal if the duty at its head is 800hc/cumec for Kharif crops and 1700 hc/cumec for Rabi crops.
3	Explain in detail different methods of finding Missing rainfall data and Annual Rainfall Data with one example each.
4	Define Precipation. Explain any one type of precipitation and explain different forms of precipitation
5	Explain in brief about Reservoiur Sedimentation. Mention disadvantages of reservoir Sedimentation and control measures for Reservoir Sedimentation.
6	Derive discharge equation for Confined Aquifer and Unconfined Aquifer
7	With a neat sketch explain in detail different forces acting on a Gravity Dam.
8	For the given cross-section of Concrete. Gravity Dam (as shown in figure). Calculate(neglecting Earthquake Forces). i) The maximum vertical stresses at heel and toe of the Dam. ii) The major principal stress at the toe of the dam. iii) The intensity of shear stress on horizontal plane near the toe

9	Explain in brief different modes of failures of Earthen Dam.
10	For an homogenous Earthen Dam with height = 52m and freeboard of 2m, flow net was constructed and following results were obtained. Number of potential drops = 25, Number of Flow Channels = 4. Dam has horizontal filter 40 m in length at its downstream end. Calculate discharge per meter length of dam . A) Soil is Iso-tropic and the co-efficient of permeability of the dam is 3 x 10^-5 m/sec B) Soil is Anisotropic Soil where kx = 4 x 10^-4 m/sec and ky = 10^-6 m/sec
11	Explain in brief about Canal Lining and control measures for Water logging.
12	Compare briefly between Kennedy's Silt Theory and Lacey's Silt Theory. Also mention drawbacks of Kennedy's Silt Theory and Lacey's Silt Theory
13	Using Lacey's theory, design an irrigation channel for the following data: Discharge Q= 50 cumecs, silt factor f=1, side slopes = 0.5H:1V
14	Explain in detail with neat sketches Canal Falls and Canal Outlets.
15	Describe with the help of sketches various types of Cross Drainage Work.