

Bachelor of Engineering
Eighth Semester Main Examination, Aug-Sep 2020
Design of Hydraulic Structures [CE-801]
Branch-Civil

Time: 3:00 Hrs**Max Marks 70**

Note : (i) Attempt any five questions. All question carry equal marks.
(ii) Assume suitable data necessary and state them clearly.

- Q.1 (a) What are the causes of failure of earthen dam and what are the design criteria?
 (b) Discuss step by step the analytical procedure, adopted for analysis of stability of gravity dam?
- Q.2 (a) How will you calculate the capacity of reservoir by mass inflow and mass demand curves?
 (b) Describe briefly the component parts of design procedure of "Ogee Spill Way"?
- Q.3 (a) Write short note on –
 (i) Draft tube (ii) Surge tank
 (b) Enlist various hydro power plant and describe any one in details with neat sketch?
- Q.4 (a) Explain rock fill dam? And discuss soil suitable for earthen dam?
 (b) What is the purpose of providing canal structure?
- Q.5 (a) Explain the design details of a "Syphon Spillway"
 (b) List different turbines used in hydro power station and mention their selection criteria.
- Q.6 Write short note on :-
 i) Galleries in gravity dam ii) Foundation treatment for gravity dams?
 iii) Life of reservoir iv) Slip circle method
- Q.7 (a) An earthen dam made of homogenous material has the following level of top of dam = 300.0m level of deepest river bed = 278.0m H.F.L of reservoir =297.5m, width of the top of dam =4.5m v/s slope =3:1 D/S slope=2:1 $K=5 \times 10^{-4}$ cm/sec. Discuss the discharge passing through the body of dam.
 (b) What is meant by "Gross drainage work"? Explain different types of C.D works?
- Q.8 (a) Compare "Bligh's creep theory" with "khosla's theory"
 (b) Explain the design of
 i) Water ways
 ii) Crust levels
 iii) Length of impervious flow.

Bachelor of Engineering
Eighth Semester Main Examination, Aug-Sep 2020
Transportation Bridges & Tunnels [CE-802]
Branch-Civil

Time: 3:00 Hrs**Max Marks 70**

Note: i) Attempt any five questions out of eight.
ii) Answer should be precise & to be point only.
iii) Assume suitable data if necessary & state them clearly.
iv) All questions carry equal marks.

- Q.1 (a) Discuss in brief the various tractions on railways.
 (b) Describe briefly the suitability of various materials which are commonly used as ballast in a railway track.
- Q.2 (a) What is creep? Discuss the theories propounded to explain probable causes of creep and what are the effects of creep?
 (b) Define gauge of Indian railway track. Enumerate different gauges used in India and discuss their suitability at different locations?
- Q.3 (a) What is cant deficiency?
 (b) Draw a neat diagram of simple right hand turnout and show its various component parts?
- Q.4 (a) Explain briefly the different types of station yards
 (b) Explain the transition curve and why it is necessary in railway track. Write down equation for setting this curve.
- Q.5 (a) What are the objects of signaling? Describe engineering principles of signaling and explain the different types of signals used in the station yard.
 (b) Explain the economical span of a bridge. Mention the forces acting on a pier
- Q.6 (a) What is dead load? Mention some of important empirical formulas which are used to find it.
 (b) Write short note on- (Any Five)
 i. Afflux and its importance,
 ii. Depth of bridge of foundation,
 iii. Alignment of a bridge,
 iv. Types of railway bridge,
 v. Lining of tunnel,
 vi. Shape and size of tunnel
 vii. The erection of bridges, strengthening of bridges
- Q.7 (a) Explain the different types of railway bridges with the help of neat sketches.
 (b) Describe the various method of hard rock tunneling and mention the advantages and disadvantages of each of them
- Q.8 (a) Explain the various types of coffer dams, where they are constructed
 also write down procedure of construction
 (b) Explain pile foundation and well foundation for bridges with the neat sketches.
 Also discuss procedure of sinking of wells.

Enrollment No.....

Bachelor of Engineering
Eighth Semester Main Examination, Aug-Sep 2020
Structural Design-III [CE-803]
Branch-Civil

Time: 3:00 Hrs

Max Marks 70

Note: i) Attempt any five questions out of eight.

ii) All questions carry equal marks.

iii) Answer should be precise & to the point only.

iv) Assume suitable data if necessary & state them clearly.

Q.1 (a) Design the container of a circular hemispherical bottom water tank for capacity of 175000 liters. Sketch the details.

(b) Write the difference between self supporting and guyed chimney.

Q.2 (a) Write a short note on wind load, calculation for chimney.

(b) Design coal bunker to hold 35 metric tonne coal, unit weight of coal is 12KN/M³ and angle of friction is 30°. Sketch the details.

Q.3 (a) Design an elevated rectangular tank having a capacity of 125000 liters. The tank is open at the top the height of staging is 12m up to the top of the column. Sketch the details.

(b) Write detailed notes on the following –

i) Design of pressed steel tank

ii) Design of stand pipe.

Q.4 Discuss the design of chimney base. A self supporting steel chimney is of height 50m above foundation and its diameter at top is 4.0m. Thickness of fire brick lining is 115 mm and this is supported by chimney has two breach openings. The chimney is situated in Indore the topography of the site is flat and the location is of terrain category 2. Compute wind loads on different zones of chimney and design plates of lowest zones.

Q.5 (a) What is retaining wall? Describe various types and structural behavior of retaining wall? Describe various types of foundation? Design raft foundation with neat sketch?

(b) Define the following

i) End bearing for steel bridges

ii) Types of trusses

Q.6 (a) Write the steps of designing of hopper portion of silo.

(b) Write short note on -

i) Lining material used for chimney

ii) Analysis of towers

Q.7 (a) Write detailed notes on roller bearing and rocker bearing.

(b) Write design steps with all technical details of pressed steel tank.

Q.8 (a) Write difference between bunker and silo.

(b) Discuss the component of bunker and Design of stiffness in bunker.

Enrollment No.....

Bachelor of Engineering
Eighth Semester Main Examination, Aug-Sep 2020
Advance Water Resources Engineering [CE-8045]
Branch-Civil

Time: 3:00 Hrs

Max Marks 70

- Note:** i) Attempt any five questions out of eight.
ii) All questions carry equal marks.
iii) Answer should be precise & to the point only.
iv) Assume suitable data if necessary & state them clearly.

- Q.1 (a) What do you mean by rain-gauge? Explain any non-recording type rain gauge.
(b) Explain in details depth area duration analysis.
- Q.2 (a) Explain briefly channel routing Muskingum method.
(b) Describe flood routing? Through reservoir in details.
- Q.3 (a) Explain reservoir operations. How linear programming is useful in water resource management? Discuss with examples.
(b) What is importance of linear programming in system? Analysis of water resources.
- Q.4 (a) How dynamic programming is used in resource a location?
(b) Explain the use of DP in reservoir. Describe briefly project of optimality analysis.
- Q.5 (a) Explain network method, utility in decision making.
(b) How simplex method is carried out in system analysis?
- Q.6 (a) Explain linear decision rule in system analysis.
(b) Explain flood management techniques in details.
- Q.7 (a) Describe the concept of Correlogram. Explain network method their application and limitations.
(b) Write short note on (i) Recording type rain gauge (ii) Risk analysis
(iii) Depth area duration
- Q.8 (a) Describe updating of network and probable making flood.
(b) What is hydrology? Explain s-curve with sketch.