



University Of Technology
Building and Construction Eng. Dept.
Final Exam –2014/2015 1st Attempt
Subject : Const. of Hydraulic Struc. Class: Second
Branch : Water and Dams Eng. Time : 3 Hours
Date : 1/6/ 2015



Answer Five Questions only and The Marks are Equally Divided

Q1: Complete the following:

- 1- The technical specifications define the distance between the main reinforcing bars in concrete beams by ----- and the amount of overlap when the length of bars which must be used is more than the manufacturer lengths of steel bars, is -----
- 2-The characteristics of normal Portland cement are the following
1 ----- 2 ----- 3 ----- 4 -----
- 3- The rocks are classified due to their physical and chemical properties into 1----- 2----- 3-----
- 4- The key factors which are used in the selection of, structural buildings, steel or concrete structure, are 1 ----- 2 ----- 3 -----
4 ----- 5 -----
- 5- The rafter is defined as-----
- 6- Some sections of standard precast and pre-stress beams are:
1-----2 -----3 -----
- 7- The partitions are structurally divided to 1----- 2-----

Q2: Give the reasons for the following:

- 1- Use of locally available materials and low-cost coating works in the banks of the rivers or canals
- 2- In the establishment of any building it is required to study of the soil that held it .
- 3- The use of filtration process in water treatment plants.
- 4- The division of all buildings broadly into light and heavy
- 5- The depth of reinforcement concrete beam is limited between (1/25) to (1/15) of the length of its space .

Q3: Explain in drawing the details for the following:

- 1-The header angle and sharp angle arches with giving the number of their centers.
- 2- cross section in the spillway.
- 3- cross section of water joint .
- 4- Section in refracted joint.
- 5- Plan , longitudinal section , and cross-section of step fish ladder.

Q 4: A) – classify the following:

- 1 - The structures of power generation.
- 2 - bricks depending on the materials used in its manufacture.
- 3 - Beams due to its location in building and depending on the

purpose of use.

4- The fish passages.

5- The single center or radial arches .

B) State the principles which must be taken into account to achieve good link in brick building

Q 5: A) Answer the followings:

1- State the principles which are noted when the buildings are covered with stone .

2- State the steps which must be accomplished when intended to pass the ship from the space of lower water level to the space of higher water level

B) State the properties of water used in concrete mixtures and what are the points that define its function.

Q 6: Answer the following:

A-) State a detailed types of hydroelectric stations falling within the river hydraulic structures and operating by pumping the stored water.

B-) State the advantages of bulldozers.

With our best wishes for your success

(2)

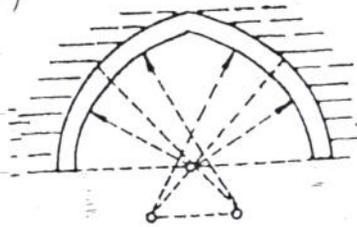
3 - To remove the colloids suspended solids which causing the turbidity of water.

4 - Depending on the method of transmission forces through its members during the construction.

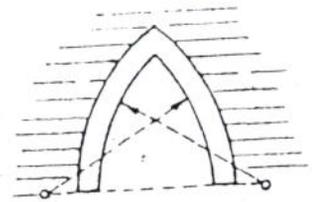
5 - To prevent the curvature of beam over the limited value due to the technical specifications.

Q.3 =

1-))



Header Angle

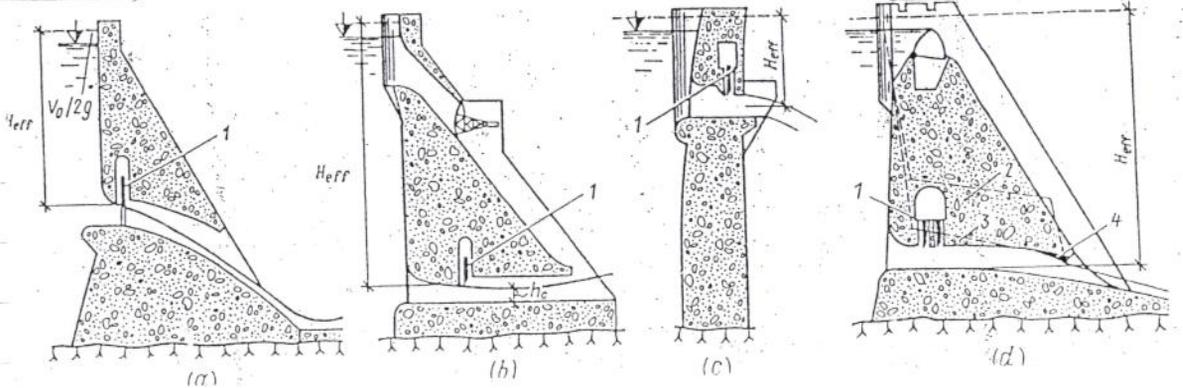


Sharp Angle

three center arches

+ two center arches

2-))



3-))

