



SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code : ENGINEERING GEOLOGY(13A01506)

Course & Branch: B.Tech - CE

Year & Sem: III-B.Tech & I-Sem

Regulation: R13

UNIT –V

GEOLOGY OF DAMS, RESERVIORS AND TUNNELS

- 1) What are dams and reservoirs? Explain the purpose of construction of major dams and reservoirs in India. 10M
- 2) Explain about: 10M
 - a) Lining of tunnels.
 - b) Economical aspects of tunneling.
 - c) Purposes of tunneling.
- 3) a) Explain the geological structural controls on selection of dam site. 10M
b) Explain the methods to control reservoir silting.
- 4) a) Explain the geological structural controls in tunneling. 10M
b) Nagajunasagar dam as a case history, explain the geological analysis.
- 5) Explain the geological factors influencing water tightness and life of reservoirs? 10M
- 6) What is a geological structure? How the geological structures are responsible for the failure of any tunnel alignment? Explain. 10M
- 7) a) What are the geological considerations necessary in the selection of dam site? 10M
b) Explain the geological causes of failure with a few cases of histories?
- 8) What is a tunnel? Explain the terms that are used in tunnels with neat sketches? Explain the purpose of tunneling? 10M
- 9) What are the various geological factors to be considered for the construction of tunnels? Explain in detail with examples? 10M
- 10) a) List out the types of dams?
b) Explain the relationship between valley topography and types of dams
c) State where the over brakes are more Geological?
d) Define tunneling over break?
e) List out the factors contributing to the success of a reservoir?

Prepared by:.

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- 1) Generally the weir is aligned at right angles to the direction of the main river current because
 - A) It ensures less length of the weir
 - B) It gives better discharging capacity
 - C) It is economical
 - D) All of the above
- 2) A straight glacis type fall with a baffle platform and a baffle wall is called
 - A) Vertical drop-fall
 - B) Glacis fall
 - C) Montague type fall
 - D) Inglis fall
- 3) The width of gravity dam at its base is how many times to that of its height
 - A) 0.2-0.4
 - B) 0.4-0.6
 - C) 0.6-0.8
 - D) 0.8-1.0
- 4) The principal uses of dams are
 - A) To provide stream regulation
 - B) To Generate power
 - C) Both A&B
 - D) None
- 5) The compressive stress at the foundation of even a large dam will rarely exceeds
 - A) 60 kg/cm²
 - B) 50 kg/cm²
 - C) 40 kg/cm²
 - D) 30 kg/cm²
- 6) Tunnel constructed for the purpose of water supply is known as
 - A) Aquiclude
 - B) Aqueducts
 - C) Aquifer
 - D) None of the above
- 7) Over break is greater in the tunnels running along
 - A) The direction of dip of bed
 - B) The direction of strike
 - C) Along the fault plane
 - D) Dip and strike both of the bed
- 8) Tunnel through which water is allowed to flow under a pressure head is the
 - A) Sub way tunnel
 - B) Pedestrian tunnel
 - C) Navigation tunnel
 - D) Pressure tunnel
- 9) The excess of quality of rock broke in and removed from the proposed tunnel is known as
 - A) Caving
 - B) Over break
 - C) Excavation
 - D) Caving and excavation both
- 10) The largest tunnel in the world provides a short route connecting
 - A) Italy and France
 - B) U.S.S.R and Italy
 - C) U.K and France
 - D) Iraq and Jordan
- 11) ----project consists of a 226 m high & 518 m long concrete straight gravity storage dam on rivers Sutelj
 - A) Nile
 - B) Sutelj
 - C) Nagarjuna sager dam
 - D) Bhakranagar project
- 12) The central portion of the dam that directly over lie on the channel is known as
 - A) Crest
 - B) Heel
 - C) Asics of the dam
 - D) River section
- 13) The upstream portion of the dam where it conducts the bearing surface is known as
 - A) Toe
 - B) Abutment
 - C) Axis of the dam
 - D) Heel
- 14) The width of the arch dam is how many times to that to its height
 - A) Half
 - B) One forth
 - C) One sixth
 - D) One height
- 15) The bhakra dam on satlus lies on a rather unfavorable site which exhibits a downstream slope of
 - A) 60-70⁰
 - B) 75-90⁰
 - C) 55-80⁰
 - D) 45-50⁰
- 16) Earth dam failures due to
 - A) Velocity of water
 - B) Percolation of water
 - C) Over tapping
 - D) Water table fluctuation
- 17) The maximum height to which an earth dam can be made is
 - A) 200M
 - B) 150M
 - C) 125M
 - D) 95M
- 18) A dam for storing water is made thicker at the bottom than at the top because
 - A) Pressure on the side increases with depth
 - B) Pressure on the side increases with depth

- C) Pressure does not change with depth D) Quality of water increase with depth
- 19) Which dam in India has distinction of being the longest main stream dam in the world
 A) Rihand Dam B) Hirakud dam C) Bhakra Dam D) Sikidari Dam []
- 20) The central building research institute is in []
 A) New Delhi B) Roorkee C) Pune D) Banglore
- 21) It is found that the talus slope has a constant slope angle which is generally about
 A) 45° B) 60° C) 75° D) 35° []
- 22) The angle of rest with respect to horizon seldom exceeds []
 A) 50° B) 45° C) 70° D) 30°
- 23) In a site location in a wide canyon with gently sloping walls and where conditions required on outlet works though the dam, the most economical type of dams are []
 A) Buttress dam B) Arch dam C) Earth dam D) Gravity
- 24) Opening through the dam through which checking and repair is done is []
 A) Conduit B) Inspection chamber C) Gallery D) Silt
- 25) The largest tunnel in the world provides a short route connecting []
 A) Italy and France B) U.S.S.R and Italy C) U.K and France D) Iraq and Jordan
- 26) The railway tunnel which is under construction in the city of palaces, Calcutta passes through
 A) Clay with peat and sand layer B) Granitic rock []
 C) Quartzite D) Sand layer only
- 27) The roof load in tunnel through unconsolidated or fragmentary material is rather insignificant provided the thickness of roof exceeds times to the diameter of tunnel []
 A) Two B) Four C) Three D) Five
- 28) In an underground mine the tunnel passing through an ore on body is []
 A) Prive B) Raise C) Wing D) Cross cut
- 29) If in the mines, tunnels are made downward to connect upper level to lower one, the same is known as
 A) Cross cut B) Conduit C) Wing D) Prive e) Subway tunnel []
- 30) The tunnel alignment is essentially through competent rock mass with little or no ground water seepage is called []
 A) Soft rock tunnel B) Hard rock tunnel C) Both A&B D) None
- 31) A good blast with a good yield is obtained if the cut hole is []
 A) Normal to face B) Inclined at 45° to the face
 C) Inclined at 15° to the face D) Inclined at 30° to the face
- 32) The best ground water reservoirs would have
 A) Low permeability and low porosity B) low permeability and high porosity []
 C) High permeability and low porosity D) High permeability and High porosity
- 33) Which of the following lining material is useful for shield driven tunnels in sub aqueous regions? []
 A) Stone masonry B) Timber C) Cast iron D) Cement concrete
- 34) If 'D' is the diameter of tunnel in meters, then the thickness of lining in mm, as per the empirical formula is given by []
 A) 42 D B) 82 D C) 104 D D) 124 D
- 35) Which one of the following tunneling methods is used for laying underground sewers?
 A) Needle beam method B) Army method []
 C) German method D) Italian method
- 36) Which one of the following is a component of a shield for tunneling? []
 A) Liner plate B) Trench jack C) Stiffener D) Cutting edge
- 37) Which one of the following is considered to be an advantage of the heading and benching method of tunnel construction? []
 A) It is suitable for construction in unstable rocks

- B) In this method, it is easy to install timber support
C) Tunneling can be continuous and the work can be expedited
D) In case of excessive water, it is easy to take correct steps
- 38) Drift method of tunneling is used to construct tunnels in []
A) Soft Grounds B) Rock C) Self Supporting Grounds D) Broken Grounds
- 39) When the crest chord-height ratio is under 3 and the rock is capable of withstanding high pressures, not being able to fail by shearing, which form of dam is most suitable? []
A) Rock fill Dams B) Thin Arch or Thin Cupola Dams
C) Buttress Dams D) Multiple Arch Dams
- 40) The reservoir behind the Bhakra dam lies upon sedimentary rocks []
A) Dharwars B) Cuddapah C) Siwalik system D) Jurassic system

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