SUB- ENVIRONMENTAL STUDIES

QUESTIONS

SEM – 6th

Branch- Civil Engg.

SHORT QUESTIONS

1. Define environment.
2. Explain, "Environmental science is a multi-disciplinary science."
3. Define ecology.
4. What is synecology?
5. Define biosphere.
6. What do you understand by "Natural Resource"? Give its types.
7. Define desertification.
8. Define overgrazing.
9. What do you mean by energy crop?
10. What are the effects of mining.
11. What is Chipko movement?
12. Write Difference between surface and Ground water.
13. What do you mean by Bio-energy?
14. What are Dam's benefit?
15. What are alternative services of energy?
16. What do you mean by water logging?
17. What do you mean by salinity?
18. What is soil erosion? Give its types.?
19. What do you mean by land degradation?
20. What is land-slides?
21. Define ecosystem.
22. What do you mean by pyramid of energy?
23. What is food chain?

(24) What is food web?
(25) What is detrity food chain?
(26) What do you mean by ecological succession.
(27) What do you mean by producers, consumers & decomposers?
(28) Define biodiversity?
(29) What do you mean by genetic, species and ecosystem diversity?
(30) What do you mean by poaching of wild life?
(31) What are the measures threats to biodiversity?
(32) What are endangered species?
(33) Define aesthetic value.
(34) Write the "Hot-spots of biodiversity".
(35) Define in-situ and ex-situ conservation of biodiversity.
(36) What is environmental pollution?
(37) What is air pollution?
(38) Write, how air pollutants are classified?
(39) What is water pollution?
(40) How water pollutants are classified?
(41) What is soil pollution?
(42) What is thermal pollution?
(43) Write ill effects of noise pollution?
(44) What is noise pollution
(45) What do you mean by solid wastes?
(46) What do you mean by solid waste Management?

(47) What are types of solid wastes?
(48) What do you mean by nuclear hazard?
(49) What are 3-R?
(50) What is ~~puto~~ Pulverization?
(51) Define Floods.
(52) Define earthquake. Writ its concept?
(53) How cyclone occur?
(54) What do you mean by disaster?
(55) Explain sustainable development.
(56) What are the measures to attain sustainable developments?
(57) What is global warming?
(58) What is ozone ~~lady~~ layer depletion?
(59) What is acid rain?
(60) What is green house effect?
(61) What are green house gases?
(62) What is rain water harvesting?
(63) What is value education?
(64) What is environmental ethics?
(65) What do you men by greazing food chain?
(66) What are the types of ecological succession?
(67) What are the structure of an ecosystem?
(68) Discuss population growth in India.
(69) How HIV/AIDS is spread?

(70) Write the causes of population explosion.

(71) HIV & AIDS stands for.

(72) What are family welfare programmes?

(73) What are autotrophs and heterotrophy?

(74) What are exhaustible and inexhaustible natural resources? Give examples.

(75) Define BOD & COD.

(76) What are biodegradable pollutants? Give example.

(77) What is Jhum cultivation?

(78) What do you mean by rubbish & refuge?

(79) Write four psychological effect of noise pollution?

(80) What are saprophytes? Give two examples?

LONG QUESTONS

1. Explain, about en-situ conservation of bio-diversity?
2. Explain the structure and characteristics of Pond ecosystem?
3. What is Sustainable development? Write the aspects and measures for sustainable development?
4. What are the impacts of industrialisation on human environment?
5. Briefly explain about "pre-serce" and "sub-sere"?
6. Write the role of an individual in conservation of natural resources?
7. Write the causes and consequences of deforestation?
8. Explain, the functions of "cyclone separator" and electrostatic Precipitatory" with diagram?
9. What is population explosion? Briefly discuss it in Indian scenario?
10. Write the basic principles of methods of soil conservation?
11. Give a case study of conflicts for water?
12. Explain the various steps employed for solid waste management?
13. What are ecological benefits of forest?
14. Write the various methods of disposal of solid wastes.

(15) Write the role of an individual in protection of environment.

(16) Explain, the various equipments used to control suspended particulates in industries.

(17) Write the effects of inorganic and organic water pollutants on animals.

(18) Discuss the Environmental Protection Act, 1986.

(19) Explain, the energy flow in eco system and show that it is unidirection.

(20) Write the merits and demerits of dams

(21) Give a comparison between in-situ and en-situ conservation of biodiversity.

(22) Discuss about rain water harvesting. Write its advantages.

(23) Write the various sources of hazardous wastes.

(24) What are the various causes and issues related to the threats of biodiversity?

(25) Write short notes on watershed management.

(26) What are various techniques used to control noise pollution?

(27) What are ecological pyramids? Explain the pyramid of Numbers.

(28) Explain environmental science is a multidisciplinary science.

(29) Write the case study of Chernobyl nuclear hazard.

(30) What are the major points of Air Prevention and control of pollution Act, 1981?

(31) Write the various approaches to control soil pollution

(32) Write the role of an ~~individual~~ individual in prevention of pollution.

(33) Write the effect of modern agriculture on world food resources.

(34) Discuss the scope and importance of environment.

(35) What are mineral resources? Explain, how mining affects environment?

Mangal
17/04/20

Question Bank Of
Structural Design-II

2 mark Questions

1) (a) For bolts of property class 4.6, what do the number 4 and 6 indicate.
(b) What is the angle between fusion faces for fillet weld?
(c) Define bolt value.
(d) How are the connections classified?
(e) Define pitch.
(f) Define readius of gyration.
(g) What are the advantages of butt joint over lap joint?
(h) Define staggered pitch.
(i) Write 2 advantages of welding over bolting.
(j) Two plates of 8mm and 18mm thickness are to be joined using longitudinal fillet weld. Suggest a suitable size of weld.
(k) What is the recommended throat thickness for incomplete penetration butt welds welded from one side only?
(l) What is the objective of providing tack rivets in steel structural members.
(m) State the types of bolts used in structure.
(n) Sketch the basic sections and symbols for single V-butt weld.
(o) Sketch the basic sections and symbols for double V-butt weld.

(p) What do you mean by structural steel?
(q) What is rolled steel section & welded steel section.
(r) Why load combination is necessary in steel design.
(s) What is HSFG bolt.
(t) Define end distance & edge distance
(u) What are the types of bolted connections.
(v) Define welding
(w) What do you mean by slot weld or plug weld?
(x) Define net sectional area of tension member.
(y) What is the min^m & max^m value of pitch of bolts in a tension member.
(z) What base plate is required below a column section

(a) Mention the types of buckling in a compression member
(b) Where do you recommend base plates.
(c) What is the limit of slenderness ratio for a short and solid rectangular column.
(d) What is effective length of compression member for a simply supported column.
(e) How slenderness ratio influences design of steel structure
(f) State the basic difference between slab base and gusseted base.
(g) What are the types of column bases usually used.
(h) What will be the buckling class of ISHB 400@ 907 N/m about z-z and y-y axis?
(i) Differentiate between web buckling & web crippling of beams.
(j) How do you obtain permissible stress for timber of select grade-I and grade-II, when the strength of grade-I timber is given.

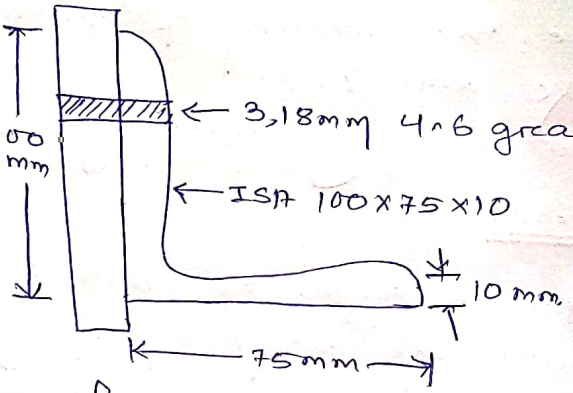
(l) How are the structural timbers graded?
(m) What do you mean by grading of timber?
(n) Write 3 classifications of mortars.
(n) What is slenderness ratio of a masonary wall.
(o) For what type of structures, tubular sections are suitable.
(p) Where will be the location of critical section of bending moment for RC wall?.
(q) What do you mean by crinkling of tubes.

5 marks questions

1) Explain different types of butt welds with neat sketch
2) List the assumptions made in design of bearing bolts.
3) Explain special consideration in steel design.
4) Explain the advantages of steel structures.
5) Discuss advantages & disadvantages of bolted connection.
6) What do you mean by slip critical sections? Explain the principle of high strength friction grip bolts.
7) Write down the properties of structural steel.
8) Describe the concept of shear lag.
9) Write down the advantages of welded connection over bolted connection.
10) Explain the concept of block shear in the design of tension member.
11) A tie member of a roof truss consists of 2 ISA 90×60 v3. The angles are connected on either side of 10mm gusset plates and the member is subjected to a factored pull of 360 KN. Design the welded connection assuming welding is to be made in the field.
12) Design a single angle tension member of a roof truss to carry a factored tensile force of 225 KN. The member is subjected to the possible reversal of

stress due to action of wind. The length of the member is 3m. Use 20mm shop bolts of grade 4.6 for the connection.

13) Determine the effective net area of the angle section shown in figure.



14) A tie member of a roof truss consists of 2, ISA 90×60×10. The tie member is subjected to a pull of 200 kN. The angles are connected to either side of a 12mm thick gusset plate. Design welded connection.

15) Design a suitable slab base for a column section ISJB 200 @ 365.9 N/m supporting an axial load of 400kN. The base plate is to rest on a concrete pedestal of M20 grade.

16) Design a suitable slab base for a column section ISHB 200 @ 365.9 N/m supporting an axial load of 400 kN. The base plate is to rest on a concrete pedestal of M20 grade. Use steel of grade Fe410.

17) Determine the design axial load on the column section ISMB 400, given that the height of column is 3m and that is pin ended. Also assume $f_y = 250 N/mm^2$ $f_u = 410 N/mm^2$ & $E = 2 \times 10^5 N/mm^2$.

18) Explain the buckling class of cross-sections in compression member.

19) Find the form factor and moment of resistance of the cross-section of the beam of Dhaman wood for Rectangular section of width 200mm, depth = 350mm.

20) Write the codal provision of design consideration for masonary walls under eccentric loading.

21) Determine the plastic moment capacity of the unsymmetrical I-section. Given size: Top flange - 100mm x 20mm, bottom flange - 200mm x 20mm and web - 200mm x 20mm.

22) What are the factors that determines the buckling class of structural elements? Determine the buckling class of ISHB 400 @ 806.4 N/m.

23) Write short note on web buckling and web crippling

24) Short note on design consideration for masonary footing

25) 9 of four planks 160mm x 40mm are to be formed in the shape of a box, find the maximum load for the mango timber with unsupported length of 3.5m in inside location.

26) A column 1450mm x 150mm is made of babul wood. The unsupported length is 3.7m. Determine the safe axial load on the column.

27) A column 120mm in dia. is made of deodar wood. The effective length of column is 1.20m. Determine the safe axial load of the round column. The column is situated in outside location. Take safe working stress in axial compression parallel to grains for outside location. $f_{cp} = 7\ N/mm^2$.

28) A timber column 200mm x 200mm section having an unsupported length of 3.5m. find the safe axial load for column assuming it to be sal wood.

29) Write short note on crinkling in tubular steel compressive members.

30) Write short note on design consideration for masonary wall footing.

10 marks questions

1) Design a lap joint to connect two plates 300mm wide and 16mm thick using 20mm dia bolts of grade 4.6. The applied service load is 375 KN.

2) Design a lap joint between two plates each of width 100mm, if thickness of one plate is 16mm & the other is 12mm. The joint has to transfer a design load of 1500 KN. The plates are of Fe410 grade and M16 bolts of 4.6 grade.

3) Design a welded lap joint for 2 plates of size 120mm x 8mm and 120mm x 12mm for maximum efficiency. Assume shop welding & Fe410 grade of steel.

4) Find the maximum force that can be transmitted through a double bolted chain lap joint consisting of 6 bolts in two rows. Given that M16 bolts are 4.6 grade & plates are of Fe410. The thickness of the plates connected are 10mm and 12mm.

5) Calculate the strength of a 20mm diameter bolt of grade 4.6 for double cover butt joint each of the cover plate being 8mm thick & main plates to be jointed are 12mm thick.

6) Design a welded lap joint for two plates of size 200mm x 8mm and 200mm x 12mm for maximum efficiency. Assume shop welding & Fe410 grade steel.

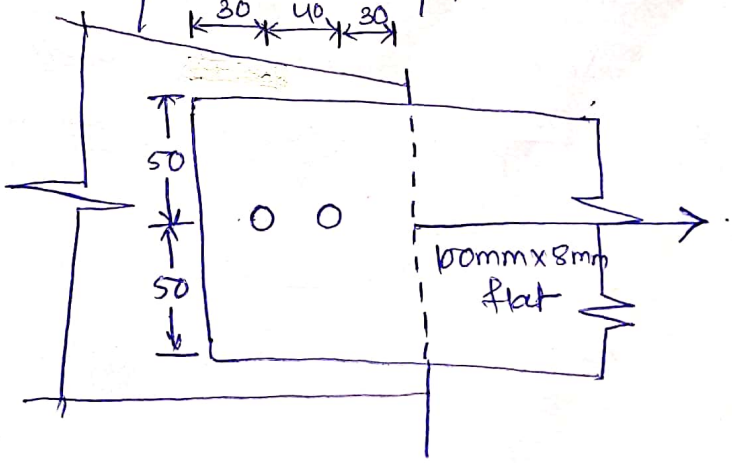
7) Find the maximum force that can be transmitted through a double bolted chain lap joint consisting of 6 bolts in 2 rows connecting 2 plates of thickness 12 mm and 10 mm. Given M16 bolts of grade 4.6 and plates of Fe410 are to be used.

8) Design a lap joint to connect two plates 300 mm wide & 16 mm thick using 20mm dia bolts of grade 4.6. The applied service load is 375 KN.

9) What are the predominant limit states in limit state method of design?

10) Two steel plates of Fe410 grade 16mm thick are to be joined by 24 mm dia bolts of property class 4.6. Assuming a pitch of 60mm and edge distance of 40mm, Calculate the strength of bolt in case of (i) Lap joint, (ii) Double cover butt joint with 10mm thick cover plate.

11) A tension member consists of a flat 100mm x 8mm which is connected to a gusset plate of 10mm thick by 2nos. of 16mm dia bolts as shown in fig. Determine the strength of the flat against yielding, rupture and block shear. Also determine the maximum load the joint can carry safely. Assume steel of grade Fe410 and bearing bolts of property class 4.6 in the field.



12) A tie member of a roof truss consists of 2 ISA 90 x 60 x 8mm. The angles are connected on the either side of 10mm gusset plates and the member is subjected to a factored pull of 360 KN. Design the welded connection. Assume welding is to be made in the field.

13) Design a single angle section for a tension member of a roof truss to carry a factored tensile force of 225 KN. The member is subjected to the possible reversal of stress due to the action of wind. The length of the member is 3m. Use 20 mm shop bolts of grade 4.6 for the connection.

14) A tension member 0.8m long to resist a service load of 20KN and a service ~~load~~ load of 50KN. Design a rectangular bar of standard structural steel of grade Fe 410. Assume that member is connected ~~to~~ by one line of 16mm dia bolts of grade 4.6.

15) Design a column section to carry a working axial load of 400KN. The column is 40m long and effectively held in positions and restrained against direction at both end. Consider $f_y = 250\ N/mm^2$.

16) A column ISWB 300 @ 471.8 N/m is to carry an axial factored load of 800KN. M20 concrete is used for the foundation. Design the slab base. Provide welded connection between column and base plate. Given that the column ~~end~~ end and base plate are not machined for bearing.

17) Design a steel column section using channel section only to carry a factored axial load of 400 KN. The column is 4m long and is effectively held in position at both ends but restrained against rotation at one end only. Consider $f_y = 250$ MPa and assume wind / earthquake actions.

18) Calculate the design compressive load for an ISHB 250 @ 536.6 N/m, 4m high. The column is restrained in erection only at both the ends. It is to be used as an uncased column in a single storey building.

19) Design a slab base for a column ISHB 350 @ 710.2 N/m subjected to a factored load of 1500 KN. M25 concrete is used for the foundation. Provide welded connection between column and base plate.

20) Design a simply supported beam of effective span 2.5m carrying a factored concentrated load of 300 KN at mid span point assuming it is to be laterally supported (unrestrained) throughout.

21) A laterally supported beam ISMB 600 @ 1202.71 N/m is placed between two supports. Determine the safe uniformly distributed load the beam can carry for an effective span of 8m. Take $f_y = 250$ N/mm². Neglect web buckling and web crippling.

22) Determine the safe axial load on a circular column of 180mm diameter made up of deodar (HP) wood for following cases.

(i) Unsupported length of column is 3.0m (outside location)

(ii) Unsupported length of the column is 4.5m (Coyside location).

27) Determine safe axial load on a circular column of 190 mm diameter made up of deodar (HP) wood. Unsupported length of column is 3.3m being situated in outside location

28) Design a ~~shed~~ simply supported beam of effective span 2.5m carrying a factored concentrated load of 300 KN at mid-span point. Assuming it to be laterally supported.

29) Design a slab base for a column ISHB 350 @ 710.2 N/m subjected to a factored load of 15000 KN. M25 concrete is used in foundation. Provided welded connection.

30) Design a simply supported beam to carry a uniformly distributed load of 50 KN/m. The effective span of beam is 9m. The compression flange of the beam would be prevented from lateral deflection.

31) Design a gusseted base of a column consisting of ISHB 400 x 82.2 kg/m with flange plate 300mm x 16mm on each flange. The column carries a load of 2000 KN and is supported on concrete pedestal with a bearing capacity of 40 MPa.

32) A timber beam having a clear span of 6.0m. carries a UDL of 15 KN/m including the self weight of beam. Assuming the beam to be made of Deodar wood, design the beam.

Sub:- Railway & Bridge Engg.

6th Sem

Question carrying 2 marks

→ What do you mean by linear waterway?
→ what is freeboard?
→ Name the types of culverts
→ Explain the terminology Ballast
→ " " " cant or superelevation
→ " " " Grade compensation
→ " " " keys
→ " " " sleeper density
→ " " " Fish plate
→ " " " Creep of rails
→ " " " Broad gauge and meter gauge
→ What is bearings of a bridge?
→ Name the types of piers
→ Name different types of masonry bridge
→ Write the definition of permanent way
→ What will be sleeper density if length of rail is 12.8 m in a straight length?
→ write the types of rail section used in our country.
→ What are the types of switches used in railway crossings & points?
→ What do you mean by coffer dam?
→ Write down the formula of economic span of bridge and define the terms
→ Find out scour depth by Lacey's formula for a bridge over a stream whose discharge is 300 m^3/sec and silt factor 1.1

→ Differentiate between cause way and submerssible bridge.

20

→ Differentiate between bridge & culvert.
→ Define 'Gauge' in Railway Engg. Give the gauge width for B.G and N.G
→ Explain creep of rails.
→ What is the main function of sleepers?
→ Explain types of sleepers.
→ Mention the advantage of providing ballast in railway track.
→ Differentiate between gradient & cant
→ Define economic span for a bridge.
→ What is the importance of scour depth in bridge design.
→ Mention different types of movable bridges
→ Find out the expression for sleeper density for a B.G track if 17 sleepers are used under rail length of 12.8 m
→ What is the max^{m} value of superelevation provided in a track as per railway board?
→ What do you mean by Afflux?
→ Define piers
→ What is the purpose of using chair?
→ Where and why dog spikes are used?
→ Name different types of rails used at points & crossings
→ What do you mean by CSI in sleeper?
→ What is interlaced sleepers?
→ What do you mean by 'throw of switch'?
→ What is interlaced sleepers?
→ What are different gradients in railway?

Question carrying 7/10 marks

→ What are the hydraulic data required for particular bridge site selection ?

→ (a) Name the different components of a bridge
(b) What are the points to be kept in mind while selecting a site for bridge ?

→ What are the types of foundations used in bridge construction and describe different components of a well foundation with Figure ?

→ write short notes on
(a) coning of rails
(b) Rail Fish-plate

→ what are the requirements of rail joint ? Discuss different types of rail joints with the help of neat sketches & give their merits and demerits

→ A 6° curve diverges from a 4° main curve in reverse direction in the layout of a B.G yard. If the speed in branch line is restricted to 40 kmph. Determine the restricted speed on the main line.

→ What are the different types of bridge Foundation? Describe shallow and well foundation with Sketches.

→ Why maintenance of tracks are necessary ? Describe how maintenance of trop surface of rails can be done.

→ What are the requirement of a good ballast material ? Describe the suitability of various materials which are commonly used as ballast in railways

→ Compare different kinds of pile foundations used for bridge and give their suitability.

→ Classify the concrete bridges as per IS with brief description and sketches.

→ What are the functions of points and crossings in railway track layout ? Draw a neat diagram of simple left-hand turnout & show its various components.

→ (a) Write the requirement of an ideal bridge
(b) What are the requirement and characteristics of ideal rail joint. ?
(c) Compare the advantages & disadvantages of wooden sleepers

→ Write short notes on
(a) Superelevation
(b) Duties of permanent way Inspector

→ Explain stop or semaphore signals with neat sketch.

→ Draw a neat sketch of a well foundation showing all components. Describe at least five components briefly.

→ Write short notes on
(a) Maintenance of track
(b) causes of creep and prevention
(c) Requirement of ballast in laying of rails.

→ What is creep ? what are the possible causes and effects of creep ? Explain various preventive and remedial measures that can be taken.

→ What do you mean by a sleeper ? Explain various functional requirements of sleeper, also write down the types of sleeper generally used in Indian railway.

→ What are the problems generally faced due to poor drainage ? Suggest remedial measures to solve these problems with neat sketches.

→ Write down the factors affecting selection of bridge site. Also list out various design data to be collected and the purpose of surface investigation for construction of bridge.

→ Describe the principle operation in laying the B.G track in India by manual & by machines

→ Explain briefly pile driving and load carrying capacity of piles

→ what is ballast ? Describe the functions of ballast. Also mention the properties of good ballast.

→ Describe all the elements present in a standard points & crossing.

Estimation & Cost Evaluation - II (6th Sem Civil Engg.)

Question Bank

2 marks Questions :-

1. What is original work?
2. What do you mean by Major Work.?
3. What is petty work?
4. What is repair work?
5. What do you mean by Annual Repair Work?
6. What do you mean by special Repair?
7. What do you mean by lead & lift?
8. What is quadrantal repair?
9. What is minor work?
10. What is contract?
11. What is agreement?
12. What do you mean by work order?
13. What is item rate contract?
14. What is lump sum contract?
15. What is labour contract?
16. What is piece work agreement?
17. What is Administrative Approval?
18. What is technical sanction?
19. What do you mean by Tender?
20. What is earnest money?
21. What is security money?
22. What is final payment?
23. What is bill & voucher?
24. What is scheduled contract?

25. What is Temporary Advance or Temporary Imprest?
26. What is suspense account?
27. What is storage charges?
28. What is supervision charges?
29. What do you understand by debit & credit?
30. What is Book Transfer?
31. What is standard Measurement Book?
32. What is Acquittance Roll?
33. What is Intermediate Payment?
34. What is Land Acquisition?
35. What is the density of steel?
36. What is the wt. of 1m length of steel bar having 16mm dia?
37. What is cost plus percentage contract?
38. What is contingency budget?
39. What is regular establishment?
40. What is on account or running payment?
41. What is mustir roll?
42. What is tender notice?
43. What is measurement book?
44. What is running bill & final bill?
45. What do you mean by drop pit?
46. What is kerb in culvert?
47. What is Syphon?
48. What is minor bridge & Major bridge?
49. What is subsidiary Cash Book?
50. What is arbitration?
51. What is crest wall & curtain wall?

52. What is skew culvert?

5 marks - Questions :-

1. Estimate the quantities of following items for a canal fall from the given drawing :-

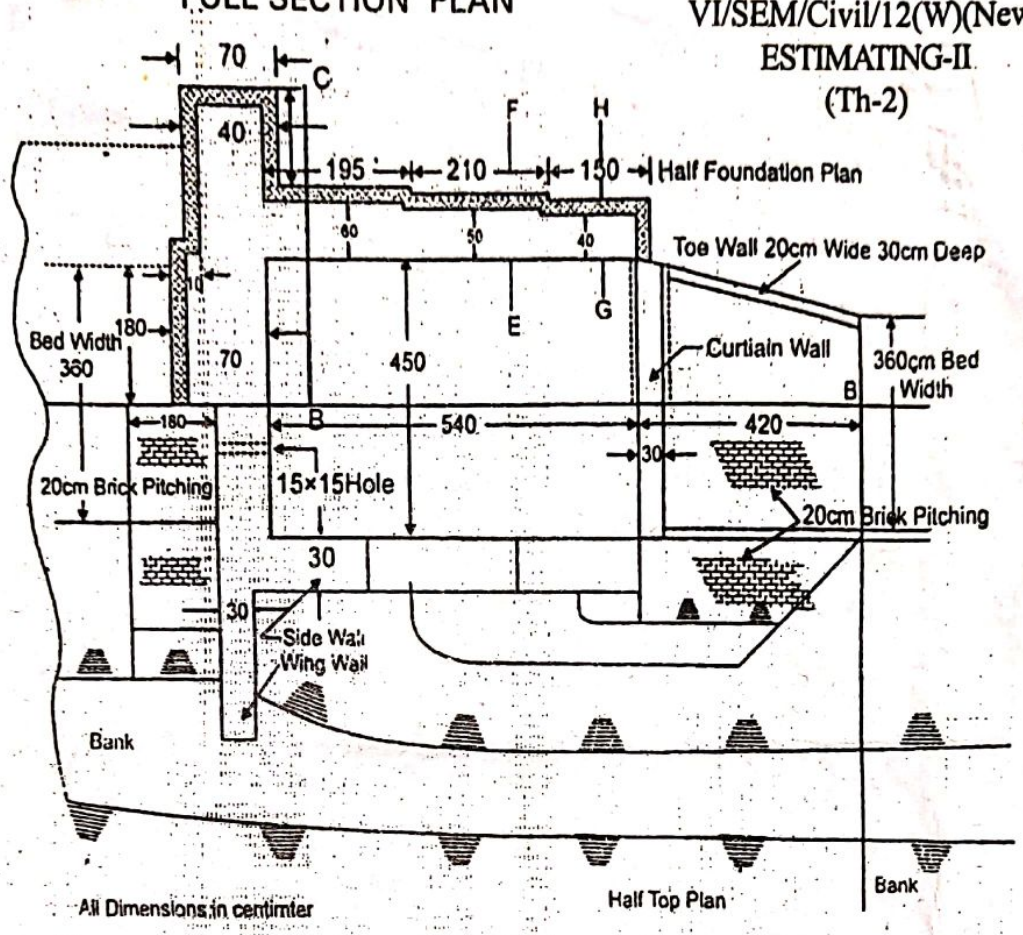
a) Earthwork in excavation ..... (5)

b) 1st Class Brickwork ..... (5)

c) Cement Concrete in foundation ..... (5)

d) Brick Pitching ..... (5)

e) Cement Plastering ..... (5)



(i) **L. Section**

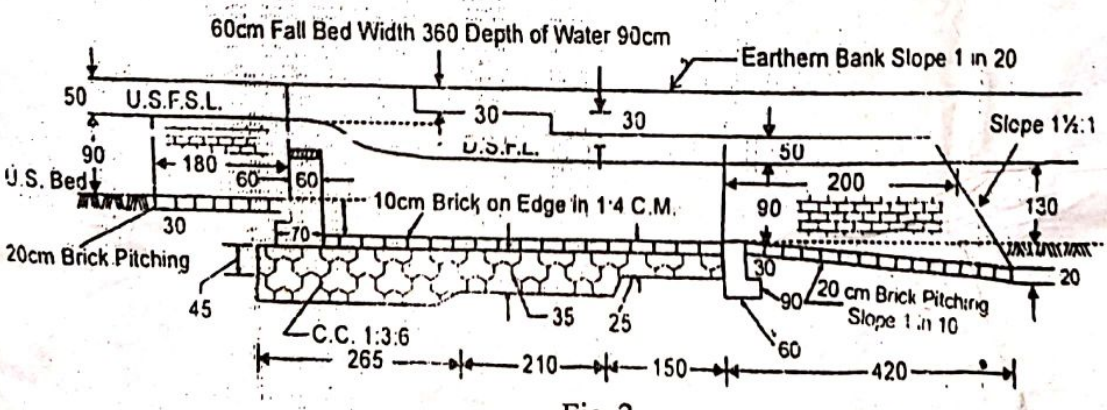


Fig. 2

2. Estimate the quantities of following item of work for a drainage syphon from the given drawing :-

a) Earthwork in excavation in foundation . . . . . (5)

b) Cement Concrete in foundation . . . . . (5)

c) 1st Class Brickwork in cement mortar . . . . . (5)

d) Cement plastering . . . . . (5)

0.1 P.C.C 1:2:4 COPING
103.30 G.L.
103.00 H.F.L
102.10 B.L.
2.50
0.4
0.30
0.40
0.60
0.50
0.3
2.25
8.00
FSL 102.40
102.20
100.80
R.C.C SLAB NALA
STREAM FLOWING FULL UNDER PRESSURE
1.0
2.25
100.50
1.20
103.70
G.L.
0.3
0.4
0.5
0.6
0.7
0.5
101.90
LONGITUDINAL SEC.
A
B
C
D
E
F
BANK OF STREAM
1:1 SLOPE
1.80
DROP PIT
1.80
10.30
0.15
1.0
0.30
1.3
0.15
1.80
SLOPE
CANAL BED
SLOPE
1.50
BOTTOM PLAN
TOP PLAN
DROP PIT
1.80
0.80
SECTION AB
103.30
H.F.L 103.00
G.L.
102.10
1.80
0.10 BRICK PITCHING
SECTION C D
100.80
G.L.
0.3
H.F.L. 103.00
102.10
1.80
3.00
0.3
0.3
103.30
SECTION EF
100.80
0.15
G.L.
0.3
0.2 R.C.C SLAB
1.80
0.3
2.70
5.30
0.30
0.40
0.60
0.50
0.50
0.80
ALL DIMENSIONS ARE IN METRES

FIG. 11-9

11-9

3. Estimate the quantities of following item for a simple slab culvert from the given drawing :-

a) Earthwork in excavation - - - - - - - - (5)

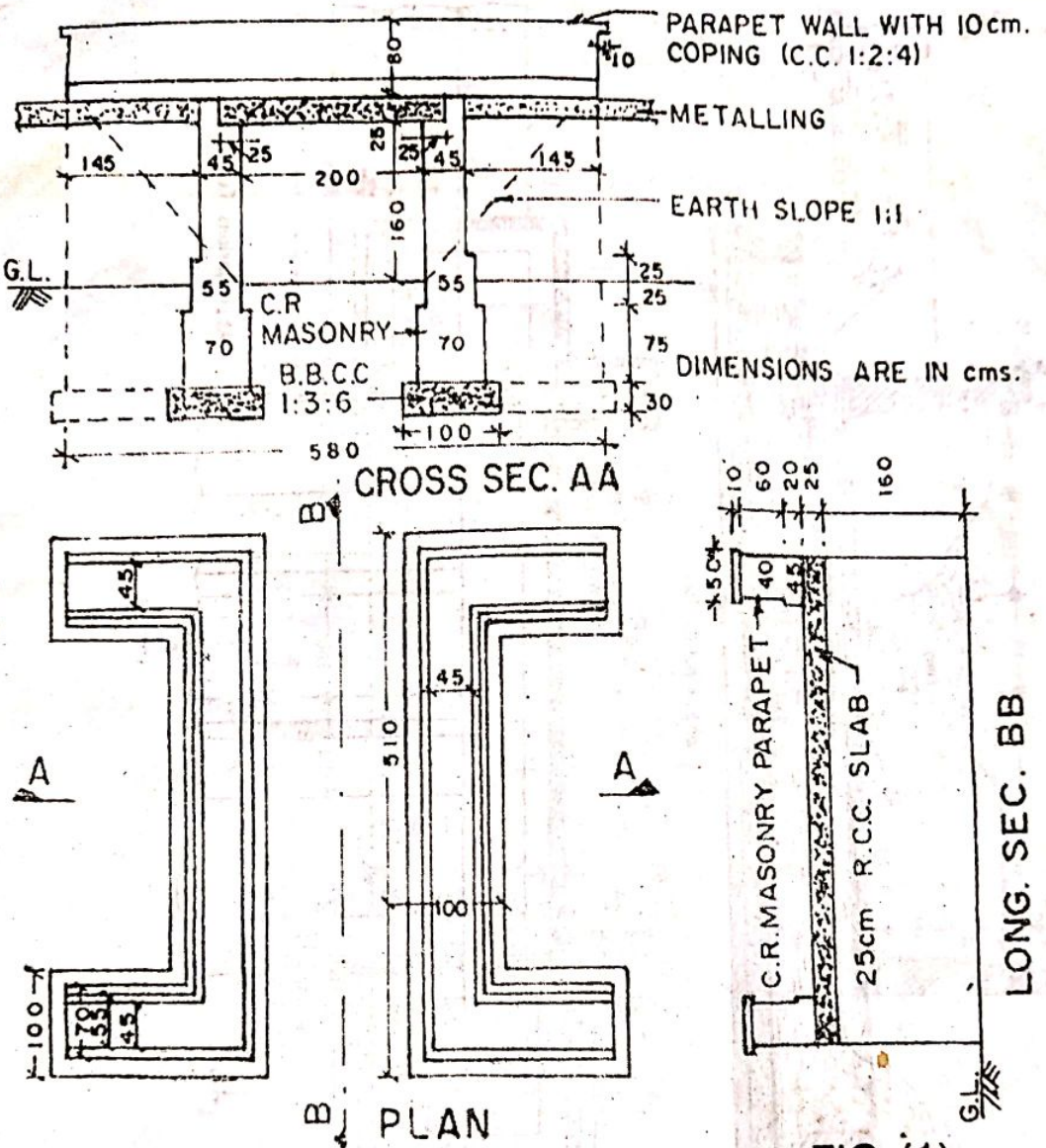
b) Cement concrete in foundation - - - - - - - - - (5)

c) 1st Class Brick work - - - - - - - - - - - - (5)

d) R.C.C work for slab - - - - - - - - - - - - - - - (5)

e) Cement Plastering - - - - - - - - - - - - - - (5)

(3)



2m SPAN R.C.C SLAB CULVERT FIG. (1)

4. Prepare a quantity estimate for the following items of works of the slab culvert given in drawing:—

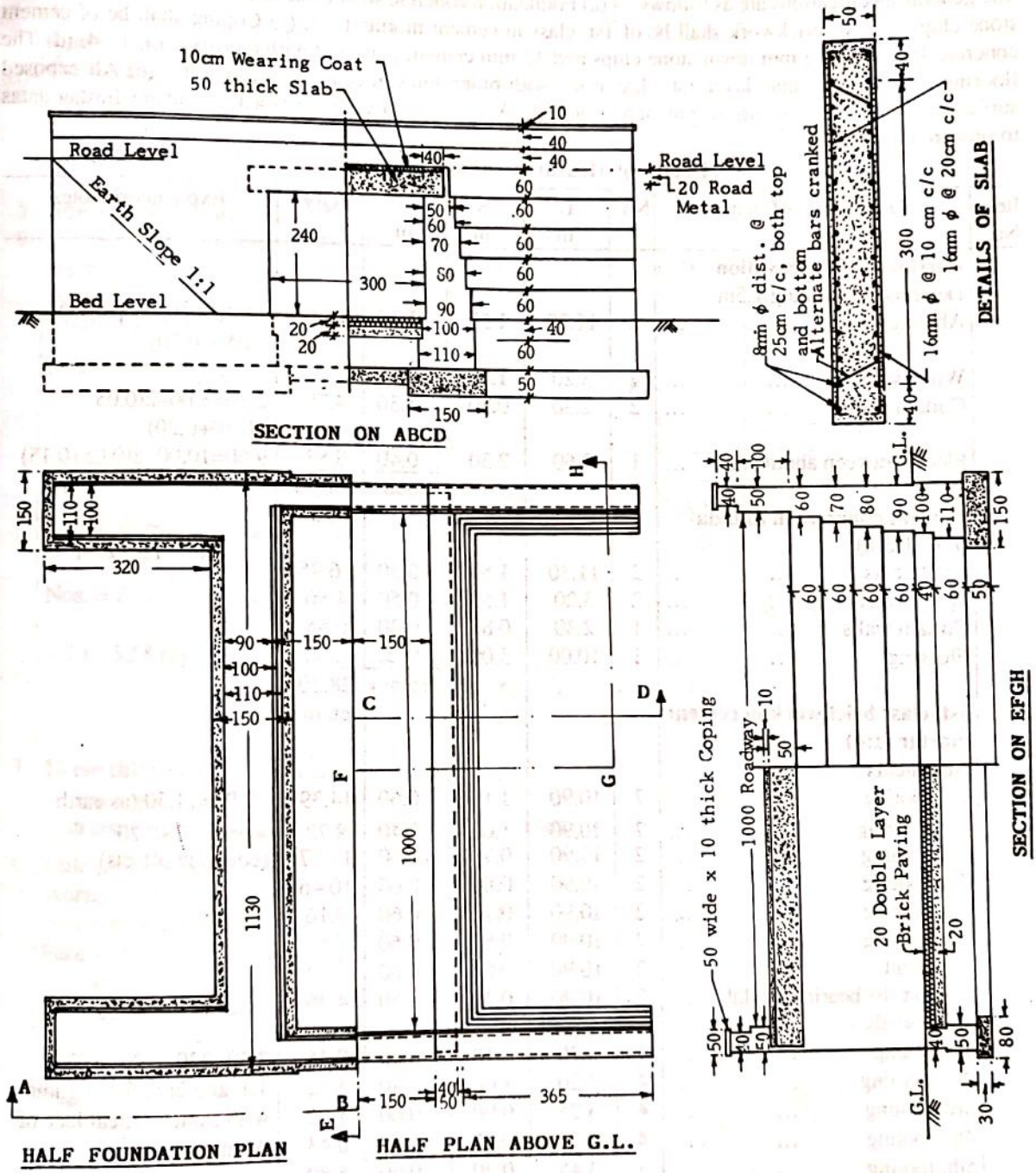
a) Cement Concrete in foundation . . . . . (5)

b) Earthwork in excavation . . . . . (5)

c) 1st Class Brick work in cement mortar . . . . . (5)

d) Cement Plastering . . . . . (5)

e) Steel bars in R.C.C work . . . . . (5)



ALL DIMENSIONS IN CENTIMETRE

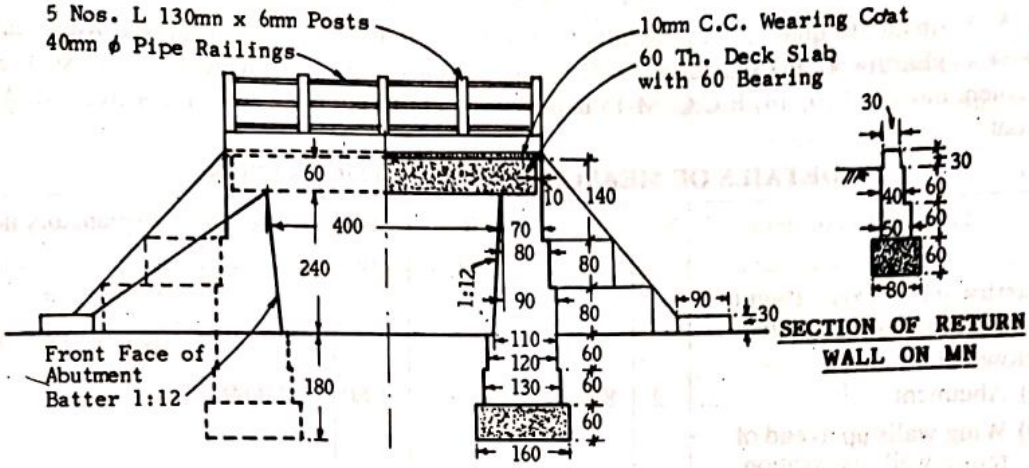
FIG. 10-27

5. Estimate the quantities of following items for a splayed wing wall culvert from the given drawing :-

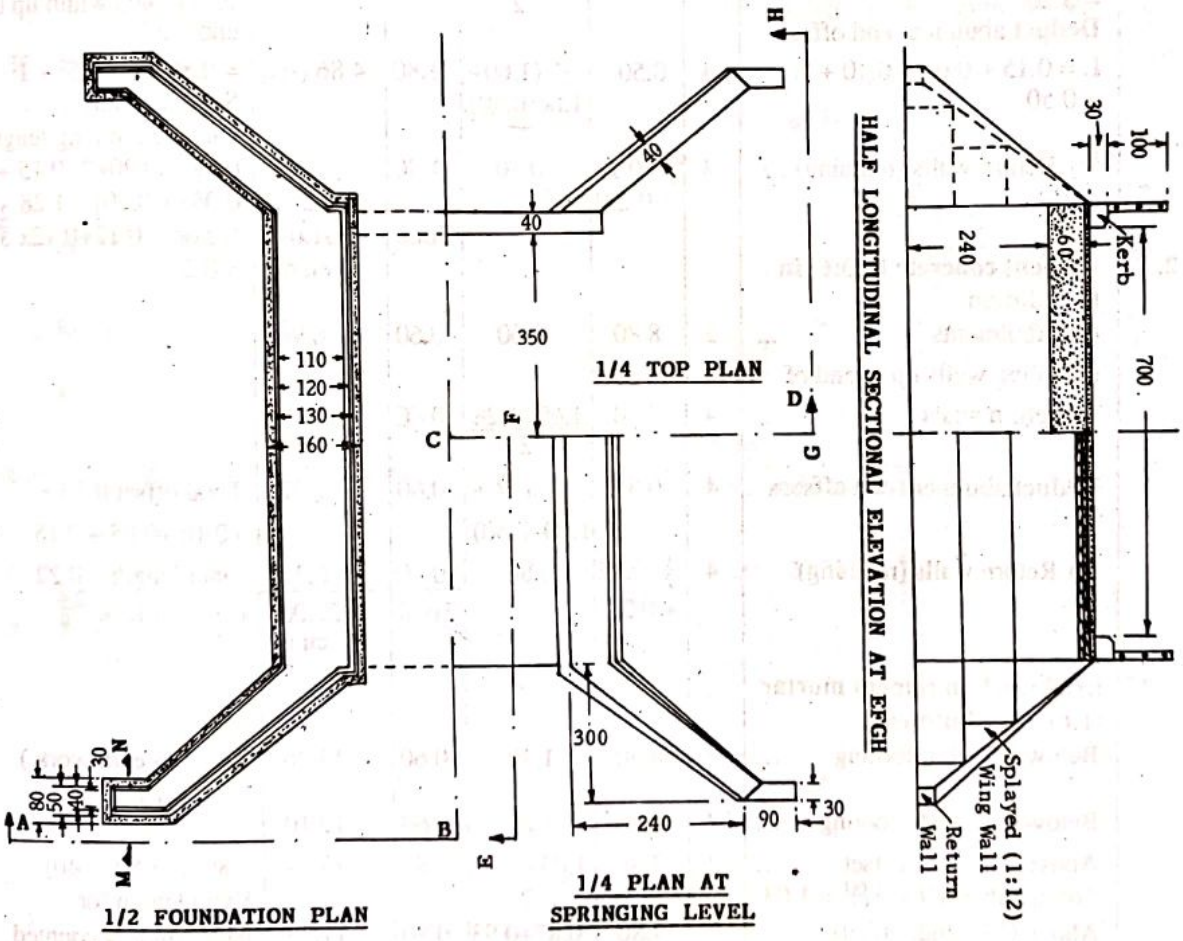
a) Earthwork in excavation - - - - - - - - - - - - - - (5)

b) Cement Concrete in foundation . . . - - - - - - - - - (5)

c) 1st Class Brickwork . . . - - - - - - - - - - - (5)



HALF CROSS SECTIONAL ELEVATION AT ABCD



(DIMENSIONS ARE IN CMS.)

SLAB CULVERT

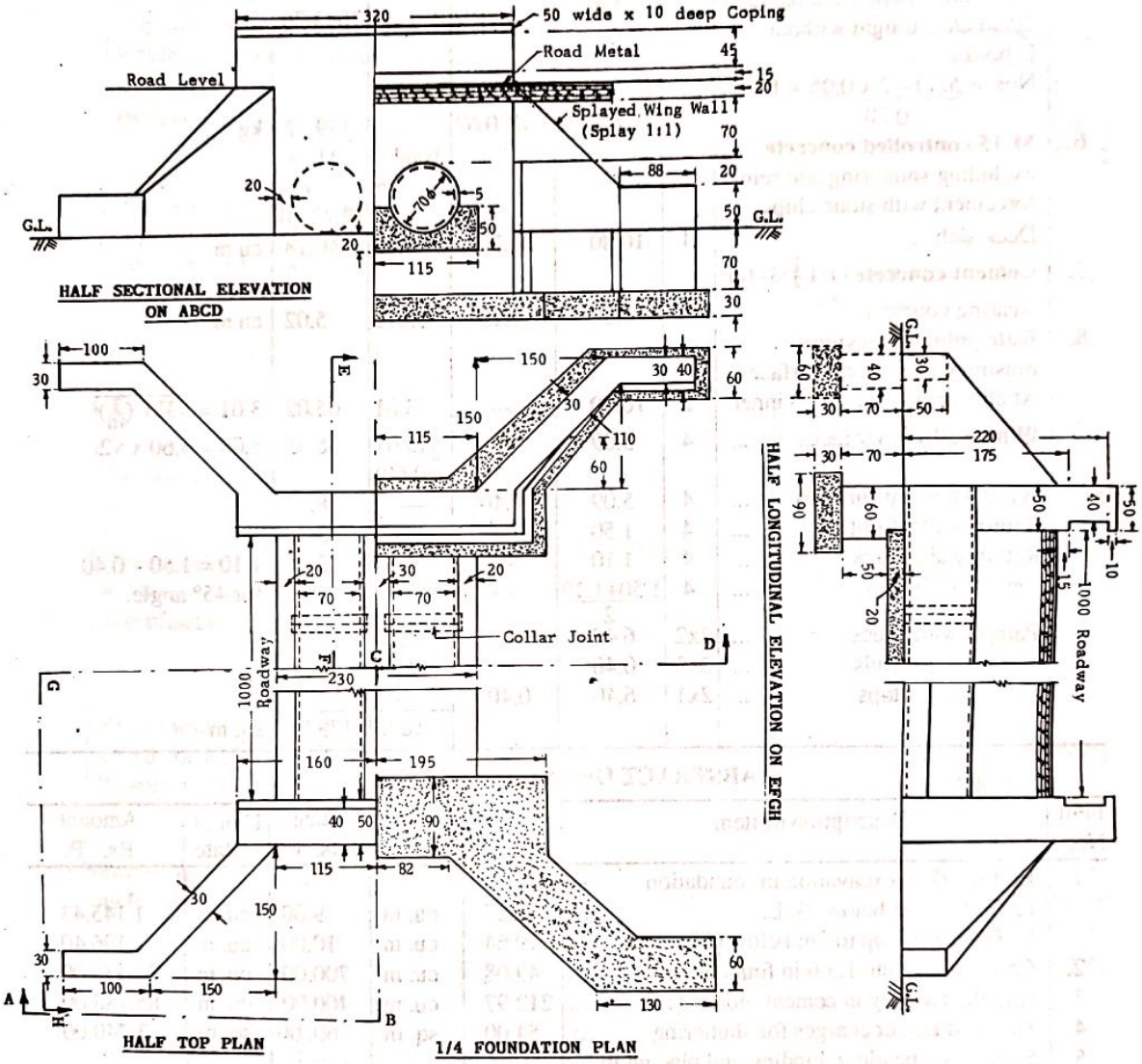
6. Estimate the quantities of following items for a hume pipe culvert from the given drawing:-

a) Earthwork in excavation ..... (5)

b) Cement Concrete in foundation ..... (5)

c) 1st Class Brickwork ..... (5)

d) Plastering ..... (5)



ALL DIMENSIONS IN CENTIMETRE

10 Marks - Questions :-

1. The dimension of a R.C.C slab is 4m x 5m x 15cm. Reinforcement of 10mm dia are placed in short span @ 15 cm c/c. Of the total no. of bars, 17 nos. have been cranked & hooked at the ends. Other rods are straight & hooked at the ends. Other rods are straight & hooked at the ends. To hold the cranked portion 4 nos. 8mm dia straight & hooked rods have been used. The 8mm dia. rods are placed in a direction of long span @ 20 cm c/c & all are straight & hooked at the ends. The covers are 1.5 cm at bottom & 3cm on all sides. Assume any other dimension not given. Estimate the total wt. of steel required for reinforcement of the slab.

2. Calculate the quantity of earthwork for a portion of road from the following data :-

Chainage	50	51	52	53	54	55	56	57	58	59	60
Ground level (R.L)	132.1	132.2	131.9	132.2	131.8	131.7	131.6	131.4	130.1	130.5	130.7

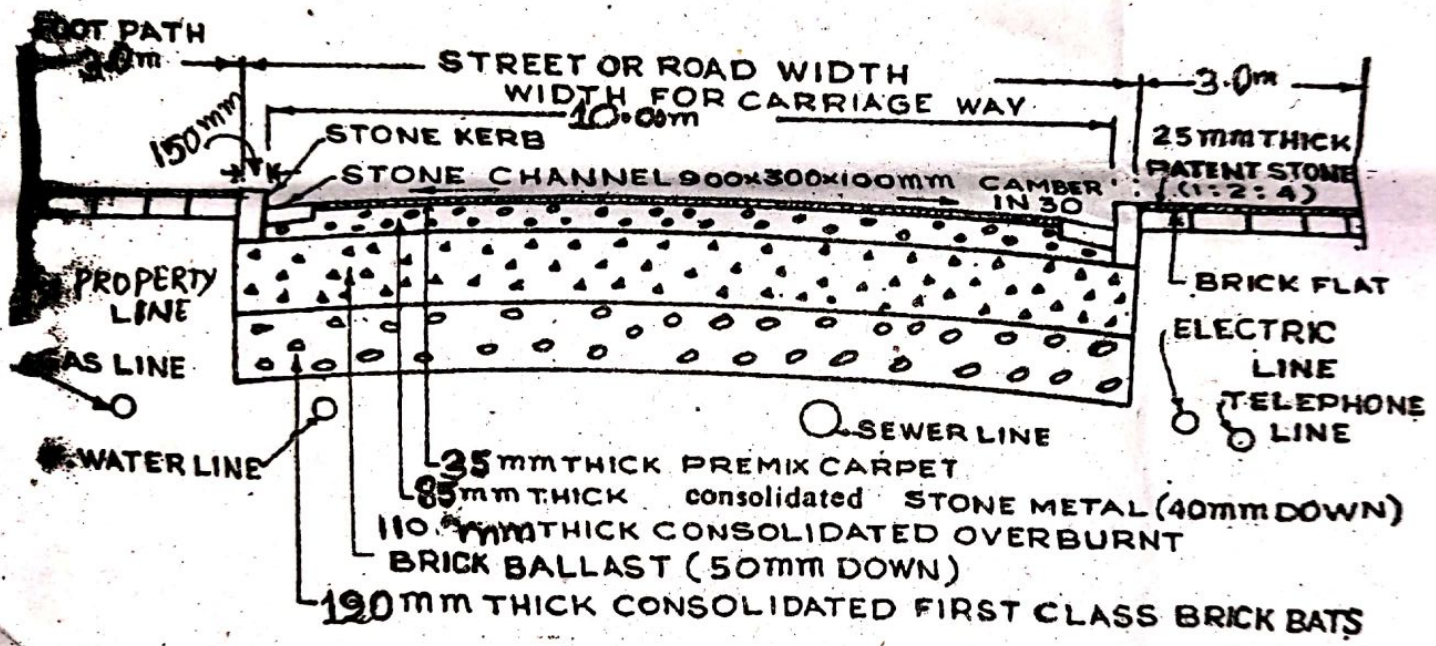
The formation level at the chainage 50 is 131.0 m & the road is in a rising gradient of 1 in 200. The width of formation is 10m & the side slopes are 1.5 : 1 in banking & 2 : 1 in cutting & the lateral slopes of road is assumed as level. The length of one chain is 20m.

3. Estimate the items involved for the construction of a new state highway of WBM road from the following data:

Length of road = 2 km, formation width = 12 m, Metalled width = 8 m, width of permanent land = 35 m, depth of borrow pit = 30cm, Avg. ht. of bank = 1.5 m (side slope = 2:1), thickness of grade - I metal soling = 90 mm, thickness of wearing coat of grade - II metal = 12 cm loose & compacted to 8 cm.
Surface to be finished with 2 coats of bitumen as given below.
First finishing coat = 12 mm chips @ 0.25 m^3 & bitumen @ 1.25 kg per m^2 of road surface
Second finishing coat = 6 mm chips @ 0.02 m^3 & bitumen @ 1.24 kg per m^2 of road surface.
Consumption of fuel @ 0.45 kg per kg of bitumen.

4. Estimate
i) The quantity of reinforcement including 10% wastage &
ii) Quantity of binding wire required for a R.C.C slab of size 3.5 m x 5 m x 12 cm thick. 8 mm dia. rods are placed in short span @ 20 cm c/c with one side 45° crank with end hooks. Rods are placed in long span @ 25 cm c/c with one side 45° crank with end hooks 6 nos. of 8 mm dia. rods along short span & 6 nos. along long span are provided as top bars. Provide clear cover of 25 mm & K = 2.

5. Detailed dimensioned sketch of a city Road c/s is having 10 m carriageway (metalled) is given in figure below. Prepare detailed estimate for constructing 750 m length of this city road. Indicate the quantities of materials also.



Q. NO. 04 [Fig :- CITY ROAD CROSS-SECTION]

Disaster Management
6th Sem (Civil Engg)
Question Bank

2 marks Questions

1) Define Hazards
2) Define disaster.
3) what do you mean by earthquake
4) what is Richters scale
5) Define Intensity of earthquake
6) what is Tsunami.
7) what do you mean by Pandemic situation.
8) Define landslide
9) what is a retaining wall.
10) Define Hazard mapping.
11) Define cyclone
12) what are the types of cyclone.

5 marks Questions

1) Differentiate between Hazard & distaster.
2) Describe about disaster management cycle.
3) Write about personal & community awareness for disaster.
4) Write about typical effects of earthquake.
5) what are the main mitigation strategies for earthquake
6) Write about causes of earthquake.
7) what are the remedies or measures for earthquake.
8) What are the onset, type & causes of Tsunami.
9) what are the risk of Tsunami.

10) What are the psychological effects of Tsunami.
11) What are the mitigation strategies of Tsunami.
12) What are the causes of landslide.
13) Write about onset of landslide.
14) What are the landslide warning signs.
15) Write about hazard zones in India for landslide
16) What are the typical effects of landslide
17) Write about concept of landslide.
18) Write about concept of cyclone.
19) What are the types of cyclone.
20) What are the typical effects of cyclone.

21) 10 marks Questions

1) Describe about concept of risk and vulnerability.
2) What are the types of disasters. Describe about them.
3) What are the elements at risk for earthquake.
4) Write about Hazard zones for earthquake in India
5) Write about onset, types & causes of Tsunami.
6) Write about Typical effects of Tsunami.
7) Describe about specific preparedness for Tsunami

8) What are the mitigation strategies fore Tsunami.

9) Write about engg. structures & hazard management fore Tsunami.

10) What are the types of landslide.

11) What are the landslide mitigation strategies.

12) What are the types of retaining walls.

13) Write about remedies of landslide.

14) Write about engg. structures built to prevent worest effects of Tsunami.

15) What are the stages of warnings desired to state government fore cyclone.

Disaster Management (6th Sem)

Question Bank

2 marks :-

1) What is flood?
2) What is flash flood?
3) What is rapid onset flood?
4) What is slow onset flood?
5) What are the elements at risk in flood?
6) What is drought?
7) What is meteorological drought?
8) What is hydrological drought?
9) What is agricultural drought?
10) What is soil moisture drought?
11) What is famine?
12) What is socio-economic drought?
13) What do you mean by drought warning?
14) What is forest fire?
15) What is chemical accident?
16) What is industrial accident?
17) What do you mean by Epidemic?
18) What is risk assessment?
19) Name the major institutions in National & State level for disaster Management.

5 Marks :-

1) What is the role of policy maker in disaster risk reduction?
2) Name the sources of chemical disasters.
3) What are the various causes & effect of chemical disaster?
4) Write down the causes of Epidemics.
5) What are the effects of epidemic?
6) Write the types of epidemics?
7) Write the warning system for epidemic?
8) What are the control measures of chemical hazard?
9) What are the causes of forest fire?
10) Write down the types of forest fire?
11) Write down the effects of forest fire?
12) Why fire management is needed?
13) What do you understand by drought warning?
14) Write down the types of flood.
15) What are the element at risk during flood?
16) Write down the types of hazard zone for flood.
17) What do you understand by flood warning?

10 Marks:-

1) Write briefly the effect of flood.
2) Describe the mitigation strategies used for flood.
3) Briefly explain the types of droughts.
4) Describe the effects of droughts.
5) Explain briefly fire management system.
6) Explain briefly the Institutional arrangement for disaster Management.