

SUBJECT CODE NO:- K-02
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E. (CIVIL) Examination Oct/Nov 2016
Environmental Engineering - I
(Revised)

[Time:Three Hours]

[Max.Marks:80]

N.B Please check whether you have got the right question paper.

- i) Answer any three questions from each section.
- ii) Assume suitable data, if necessary.
- iii) Figures to the right indicate full marks.

Section A

Q.1	a) Enlist the various air pollutants giving their sources.	06
	b) Explain the theory of atmospheric diffusion.	08
Q.2	a) Explain the effect of SO ₂ on different material.	07
	b) Describe the green house effect on environment changes.	06
Q.3	a) State instruments used for 5ppm control and explain wet collectors with sketch.	07
	b) Explain plume behaviour with the help of sketches.	06
Q.4	a) Explain primary and secondary air pollutants.	07
	b) Describe with neat sketch low different atmospheric condition give rise to different kinds of plume.	06
Q.5	Write short note	
	a) Calculation of stack weight	05
	b) Acid rain	04
	c) Ozone depletion	04

Section B

Q.6	a) Draw flow diagram of water supply scheme with their functions.	08
	b) Explain physical and chemical characteristics of water.	06
Q.7	a) Design a cascade aerator having discharge of 320m ³ /day. Assume suitable data.	07
	b) Explain variation in rate of demand. what factor affect variation in demand.	06
Q.8	a) Design a plain sedimentation tank to treat 7 million litres water per day. Take detention period of 8 hours and assume a depth of 3.5m.	07
	b) Describe various types of coagulants commonly used in water treatment.	06

- Q.9 A rapid sand filter proposed for a water supply treatment plant of town having population of 75,000. Avg. water supply in the town in 150lpcd. Rate of filtration is 100 L/m²/min. Find size and no of filter bed required. Design the lateral and manifold under drainage system. Compute the wash water discharge required of rate of washing is 45 cm/min. 13
- Q.10 Write short note
- i) Fire demand 04
 - ii) Differential rapid sand fuller and slow sand fuller 05
 - iii) Disinfection 04

SUBJECT CODE NO:- K-23
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E. (CIVIL) Examination Oct/Nov 2016
Design of Structures - II (RCC)
(Revised)

[Time:Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 and Q. No. 6 are compulsory.
 - ii) Attempt any two questions from remaining questions of each section.
 - iii) Use IS 456-2000 is allowed.
 - iv) Assume suitable data, if required and state it clearly.

Section A

- | | | |
|-----|--|----------------------|
| Q.1 | A) Explain the following terms.
i) Modes of failure.
ii) Limit state of serviceability
iii) Stress block parameter.
B) Explain types of shear reinforcement. | 06

04 |
| Q.2 | a) How we can increase the bond between steel and concrete.
b) A rectangular reinforced concrete beam is simply supported on two walls 230 mm thick and 6m center to center. The beam is carrying an imposed load of 18KN/m Design the beam with all necessary checks. Use M25 concrete & Fe415 steel. | 03
12 |
| Q.3 | a) What is mean by cracking? Explain the types of cracks.
b) A doubly reinforced rectangular beam has the following dimension's b=300mm, D=480mm, $d^1=40$ mm ultimate moment is 180KN-m is applied on the beam. Design the beam if M20 grade of concrete and Fe415 grade of steel used. | 03
12 |
| Q.4 | a) What are the different cases encountered in the analysis of a flanged section.
b) A T- beam of 8m clear span, simply supported on wall supports 230mm wide is subjected to a dead load 20 KN/M & live load 23 KN/M. Design the beam if.
Width of flange= 1310 mm
Depth of flange=110mm
Over all depth of beam=560 mm
Width of web=350mm
Effective cover=40mm. | 03
12 |
| Q.5 | a) Explain the type of deflection.
b) Design the shear reinforcement for simply supported beam carrying an U.d.l. 50 KN/m. the span of beam is 6m, width of beam is 250mm & 650mm deep. Beam having 6 bars of 25mm dia.. use M25 grade of concrete & Fe415 steel. | 05
10 |

Section-B

- | | | |
|------|---|----------------|
| Q.6 | <p>a) Explain the following terms.</p> <ul style="list-style-type: none"> i) One way-slab & two-way slab. ii) Necessity of torsion reinforcement in the slab. iii) Reason's for providing minimum shear reinforcement in beam. <p>b) Explain the function of torsional reinforcement at the corner of slab.</p> | 06 |
| Q.7 | <p>a) Establish the relationship for the load carrying capacity of an axially loaded short column.</p> <p>b) Design a short rectangular column section to carry an ultimate axial load of 1250 KN. Assume effective length of column as 3.4m use M20 and Fe500 grades</p> | 04
03
12 |
| Q.8 | <p>Design a reinforced concrete slab for a hall of 5m x 6.4m .clear spans supported on beams of width 300mm. The slab is simply supported on one short edge and continuous over three adjacent supports. Live load on slab is 3KN/m² & floor finish is a 1 KN/m². Assume mild exposure .Take M25 and Fe500 grades.</p> | 15 |
| Q.9 | <p>a) Explain the importance of ductility in seismic design. Also write the name of IS code available related to earthquake.</p> <p>b) A dog-legged staircase for a residential building consists of 18 steps, each of 300mm tread& rise 180mm with an intermediate landing 1.2 m in width at the middle. The width of stair-case is also 1.2m. If the flights are of equal number of steps, design the staircase & show the reinforcement. Take $f_{ck}=25 \text{ N/mm}^2$ & $f_y=500 \text{ N/mm}^2$.</p> | 04
11 |
| Q.10 | <p>Design an Isolated rectangular sloped footing for the column of size 400mm x 400mm reinforced with 6 bars of 16mm diameter and carrying an axial ultimate load of 1200KN. Take S.B.C of soil is 190 KN/m² use M20 grade of concrete and Fe 415 grade of steel.</p> | 15 |

SUBJECT CODE NO:- K-52
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(Civil) Examination Oct/Nov 2016
Geotechnical Engineering
(Revised)

[Time:Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

- N.B i)solve any three question from each section .
 ii)Assume suitable data it necessary .

Section- A

- Q.1 a) Explain with sketch Geological cycle for origin of soil 06
 b) A porosity of soil sample is 40% and specific gravity $G=2.6$ calculate void ratio, dry unit weight, saturated unit weight and submerged unit weight Take $\gamma_w=9.81\text{kn/m}^3$ 07
- Q.2 a) Discuss the 'textural classification system' with neat sketch 07
 b) What are the different phase system of soil mass 06
- Q.3 a) Prove that permeability of stratified soil in parallel is greater than in perpendicular direction 07
 b) Explain with figure different particle size distribution curves 06
- Q.4 Write a note on any three 14
 a) Relative density
 b) Honey comb soil structure
 c) Kaolin mineral
 d) Plasticity chart
 e) Flow net
- Q.5 a) Explain initial primary and secondary consolidation 07
 b) Explain square root time fitting method 06

Section -B

- Q.6 a) Explain Newmarks influence chart and its Uses 07
 b) What are the different drainage conditions used in shear test 06
- Q.7 a) Explain 'Swedish circle' method 07
 b) What are the different types of earth pressure explain 06
- Q.8 a) Explain laboratory 'direct shear test' with neat sketch 07
 b) What are the different types of slope failures 06
- Q.9 Write a note on any two 14
 1. Boussinesq's equation for point load
 2. Trial wedge method
 3. Isobar diagram
 4. Compare Rankine's theory and coulomb's theory
- Q.10 a) Obtain an expression of earth pressure at rest 06
 b) Explain vane shear test 07

SUBJECT CODE NO:- K-83
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E. (CIVIL) Examination Oct/Nov 2016
Water Resource Engineering - I
(Revised)

[Time:Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

N.B

- i) Q.No.1 and 6 are compulsory.
- ii) Answer three questions from each section from remaining.
- iii) Assume suitable data if necessary.

Section A

- Q.1 Answer the following (any five) 10
- Draw neat sketch of hydrological cycle
 - Explain evapotranspiration process
 - What are assumptions of unit hydrograph theory
 - Define runoff and state its classification
 - Enlist instruments used for discharge measurement
 - What are the different water budget equations
 - Enlist various forms of precipitation
 - Define runoff hydrograph.
- Q.2 a) Explain the different methods of determining the average rainfall over a catchment due to storm. Discuss the relative merits and demerits of the various methods. 06
- b) For a drainage basin of 600km², isohyets drawn for a storm gave the following data 04
- | Isohyets (interval) (cm) | Inter- isohyetal area (km ²) |
|--------------------------|--|
| 15-12 | 92 |
| 12-9 | 128 |
| 9-6 | 120 |
| 6-3 | 175 |
| 3-1 | 85 |
- Estimate the average depth of precipitation over the catchment.
- Q.3 a) Discuss the importance of evaporation control of reservoir and possible methods of achieving the same. 04
- b) List the factors affecting a flood hydrograph. Discuss the role of these factors. 06
- Q.4 a) The ordinates of 3-hour unit hydrograph are given below 05
- | Time(hr) | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 |
|------------------------------|---|----|----|----|----|----|----|----|----|----|----|
| Ordinates(m ³ /s) | 0 | 10 | 25 | 20 | 16 | 12 | 9 | 7 | 5 | 3 | 0 |
- Find the ordinates of a 6-hour unit hydrograph for the same basin analytically. What is the peak value of discharge in this unit hydrograph.
- b) A storm with a 15cm precipitation produced a direct runoff of 8.7 cm. The time distribution of the storm is as follows 05

Time from start(hr)	1	2	3	4	5	6	7	8
Incremental rainfall in each hr.(cm)	0.6	1.35	2.25	3.45	2.7	2.4	1.5	0.75

Estimate ϕ index of the storm.

Q.5 Write short notes on (any two)

- Gumbel's distribution
- Log Pearson type- III distribution
- Synthetic unit hydrograph
- Evaporimeters

10

Section B

Q.6 Answer the following (any five)

- State Darcy's law
- Define barometric efficiency
- Explain the term delta and duty.
- Define term specific yield
- Define Aquifer and Aquiclude
- Enlist various methods of surface irrigation
- Define permanent wilting point

10

Q.7 Develop the equation relating the steady state discharge from a well in an unconfined aquifer & depths of water table at two known positions from the well. State clearly all the assumptions involved.

10

Q.8 Explain with neat sketches different watershed structures in drainage line treatment

10

Q.9 The root zone of an irrigation soil has dry weight of 15KN/m^3 and a field capacity of 30%. The root zone depth of a certain crop, having permanent wilting percentage of 8% is 0.8m. determine: a) depth of moisture in the root zone at field capacity b) depth of moisture in the root zone at permanent wilting point and c) depth of water available

10

Q.10 Write short notes on (any two)

- Consumptive use of water
- Recharge of ground water.
- Unconfined aquifer and a leaky aquifer
- Effects of water logging.

10

SUBJECT CODE NO:- K-172
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination Oct/Nov 2016
Design of Structure - I (Steel)
(Revised)

[Time:Three Hours]

[Max. Marks:80]

N.B

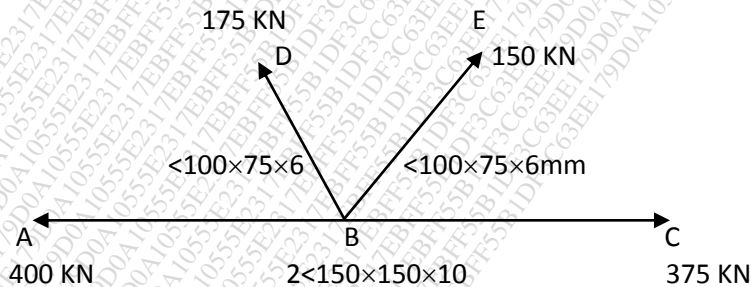
Please check whether you have got the right question paper.

- i) Attempt any three questions from each section.
- ii) Assume suitable data if necessary.
- iii) Figures to the right indicate full marks.
- iv) Use of IS 800-2007 and steel table is allowed.

Section A

Q.1

- a. A tie member of roof truss consists of 2 ISA 90,60,10 mm. The angles are connected on both sides of 12 mm thk gusset plate and subjected to a factored pull of 500 KN. Design welded connection if welding is to be done on all three sides. Assume shop welding. 06
- b. Design connections for members of roof truss, with gusset plate 10 mm thk,, as shown in the fig. 07
Using 16 mm dia. Bolt of grade 4-6.



Q.2

- Design suitable angle member to carry a tensile factored load of 300 KN. The length of the member is 3.0m and the member is subjected to reversal of stresses. The tension member is connected to a gusset plate of 16 mm thk. With one line of 20mm dir. bolt of grade 8.8. Use steel of grade Fe 410. 13

Q.3

- a) In case of single angle strut, when the loading is eccentric, how the slenderness ratio is calculated? 03
- b) A compression member of roof truss is subjected to carry axial load of 300 KN. The length of the member is 3.0 m. Design a suitable double angle section such that the angles are placed on both sides of 10 mm thk. Gusset plate. Also design connections using suitable dir. of bolts of grade 4.6. 10

Q.4

- Design a built up column of 5.0 m length to carry factored axial load of 1350 KN, using lacing system. The column is restrained in position and not in direction at both the ends. Assume grade of steel as Fe 410. Consider bolted connections. 13

- Q.5 Answer the following,
- 1) Write the procedure for design of battering which should cover all the guidelines as per IS. 05
 - 2) Which are the various design strengths of the tension member? Explain in detail block shear strength. 05
 - 3) Explain, 04
 - a) Shear lag
 - b) Types of weld with neat sketches and advantages of weld

Section B

- Q.6
- a. Differentiate between slab base and gusseted base. 02
 - b. A column ISHB 350 about 661.20 N/m carries an axial factored load of 1700 KN. Design suitable bolted gusset plate base. The base rests on M 15 grade concrete pedestal. Use 24 mm bolts of grade 4.6 for making the connections. Draw neat sketch. 11
- Q.7 A simply supported beam of 5.50 m span carries an u.d.l. of 50 KN/m, in addition to central point load of 60 KN. The flanges of the beam embedded in the concrete. Design the section and check the same for shear, deflection, web buckling and web crippling. 13
- Q.8
- a. Explain the concept of curtailment of flange plate in plate girder. 02
 - b. A welded plate girder is spanning over a length of 30 m and is simply supported. It carries u.d.l. of 40 KN/m and two concentrated loads of 200 KN each acting at 10 m from both the ends. It is fully restrained at both the ends against lateral buckling. Design the section giving following checks, section classification, service-ability, compression flange buckling, moment carrying capacity, web capacity. 11
- Q.9 Design simply supported gantry girder to be used in an industrial building for following data, 14
- i) Crane capacity = 120 KN
 - ii) Wt-of crane & crab = 200 KN
 - iii) Minimum clearance between crane hook and gantry girder is '1-0m'
 - iv) Wheel base = 3 m
 - v) c/c distance between gantries = 16 m
 - vi) c/c distance between gantry columns = 5.0 m
 - vii) Crane type: Electrically operated
- Q.10 Answer the following,
- a) i) Draw a neat sketch of compound fink truss showing all its components 03
 - ii) How pitch and spacing is decided for a truss 02
 - b) i) How laterally unsupported beam differs from laterally supported beam? 01
 - ii) How design bending strength is calculated in case of laterally unsupported beam. 04
 - c) Write short note on beam connections. 03

SUBJECT CODE NO:- K-197
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination Oct/Nov 2016
Engineering Geology
(Revised)

[Time:Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Q. No 1 is compulsory and solve any two from remaining questions from section A.
 - ii) Q. No. 6 is compulsory and solves any two from remaining questions from section 'B'.
 - iii) Neat and labelled diagrams must be drawn wherever necessary.

Section A

- | | | |
|-----|--|----|
| Q.1 | Write short notes on (any five) | 10 |
| | <ul style="list-style-type: none">i) Schistose and Gneissose structure.ii) Stress & antistress mineralsiii) Mesozoic eraiv) Climatic change of Gondwana.v) Intensity of earth quake.vi) Extrusive rocksvii) Regional metamorphism. | |
| Q.2 | a) What is igneous rock? Explain Hatch's classification. | 08 |
| | b) Explain physiographic divisions of India. | 07 |
| Q.3 | a) What is fault? Explain the various types of faults. | 08 |
| | b) Explain Geological time scale with respect to Cenozoic era. | 07 |
| Q.4 | a) Give the brief account of the Gondwana rocks of India. | 08 |
| | b) Enumerate salient characters of youth, mature and old stages of rivers. | 07 |
| Q.5 | a) What is mineral? Explain the physical properties of minerals. | 08 |
| | b) What is volcano? Explain types of volcano. | 07 |

Section B

- | | | |
|-----|--|----|
| Q.6 | Explain the terms (any five) | 10 |
| | <ul style="list-style-type: none">i) Overbreakii) Isoclinal foldiii) Strike and dip.iv) Red Tychalitic basaltv) Support during tunnellingvi) Swelling beds or rockvii) Terminal creep. | |
| Q.7 | a) What is exploratory drilling? What are the advantages of drilling? | 08 |
| | b) Explain the engineering characters of Basalts. | 07 |

- Q.8 a) What is tunnel? Describe various geological problems met during construction of tunnels. 08
b) Differentiate between unconfined and confined aquifers. Add note on artesian well. 07
- Q.9 a) Describe the various geological factors that may cause trouble in the construction of dam. 08
b) Write short notes on the following 07
i) Factor promoting landslides
ii) Factors affecting stability of bridges.
- Q.10 a) Write any four rocks, with reference to the properties of building stones. 08
b) What is rain water harvesting? Give the importance of it. 07

SUBJECT CODE NO:- K-297
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination Oct/Nov 2016
Theory of Structure - II
(Revised)

[Time:Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

N.B

- i) Question number one and six are compulsory.
- ii) Attempt any two questions from each section from remaining.
- iii) Assume suitable data if necessary.
- iv) Use of IS 800 and steel table is permitted.

Section A

- Q.1 Attempt any five. 10
- i) Explain upper bound theorem.
 - ii) Concept of plastic winged.
 - iii) Define the term local factor
 - iv) Distinguish between statically determinate and indeterminate structures.
 - v) State Castigliano's second theorem.
 - vi) Explain static indeterminacy.
 - vii) Assumption in trusses.
- Q.2 05
- a) Find shape factor of tangle of base b and height h.
 - b) Find the value of mp for propped cantilever of span l and subjected to uniformly distributed load of $w\mu/m$. 10
- Q.3 Analyse the beam shown in fig.1, if support B sinks by 25mm. Take $EI = 3800KNm^2$. Draw SFD and BMD. Use slope detection method. 15

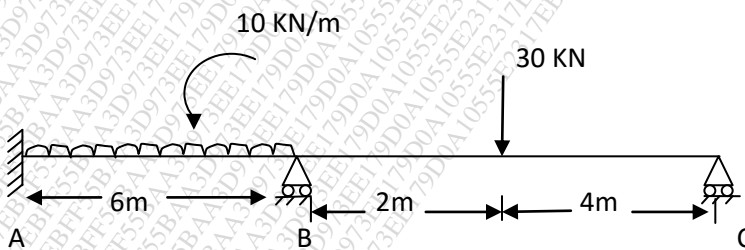


fig.1

- Q.4 Analyse the patal frame shown in fig.2 by Column Analogy method. 15

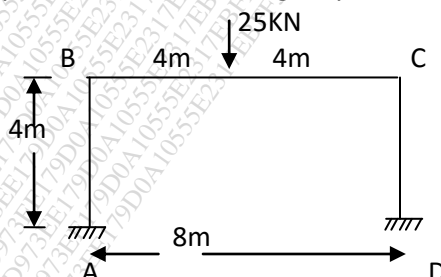
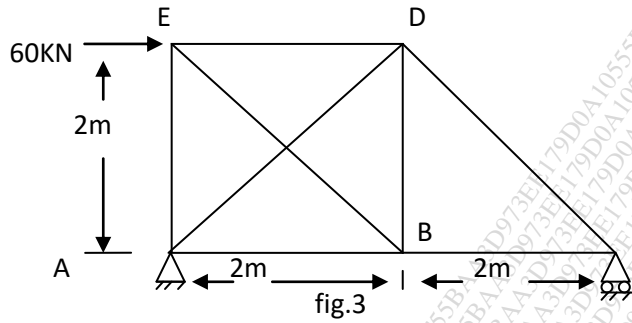


fig.2

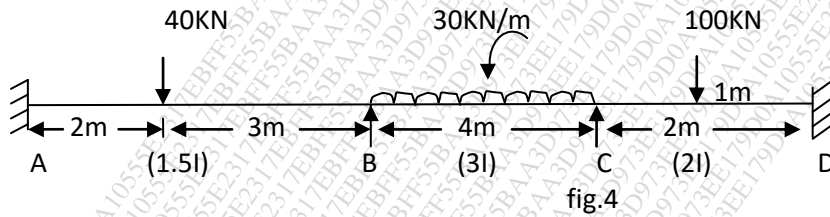
Q.5 Analyse the pin jointed redundant truss shown in fig. 3. Take $EI = \text{constant}$ 15



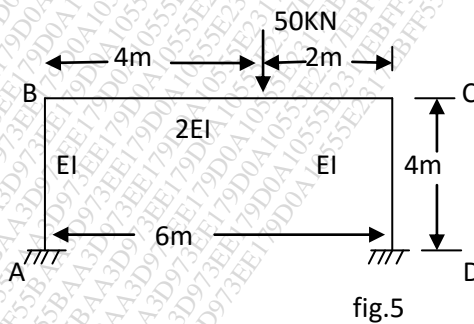
Section B

Q.6 i) State the distribution theorem. 02
 ii) Explain Distribution factor and Rotation factor. 02
 iii) Construct influence line for BM, SF and normal thrust for two winged parabolic arch of span l and rise h . 06

Q.7 Determine the end moment A, B, C and D for continuous beam shown in fig.4 by using kelnis method. Draw BMD. 15



Q.8 Determine the end moments of the member of frame shown in fig.5. Draw BMD use moment distribution method. 15



- Q.9 A two winged parabolic arch on equal levels of supports having span of 36m is subjected to u.d.l of 40 kN/m on left half of span centralise is 8m Determine the position and magnitude of maximum bending moment. Take $I = I_c \sec \theta$. Draw BMD.
- Q.10 Analyse the beam shown in fig 6 by moment distribution method. If support B sink by 2.50mm. For all members $I = 3.5 \times 10^7 \text{ mm}^4$ and $E = 200 \text{ kN/mm}^2$.

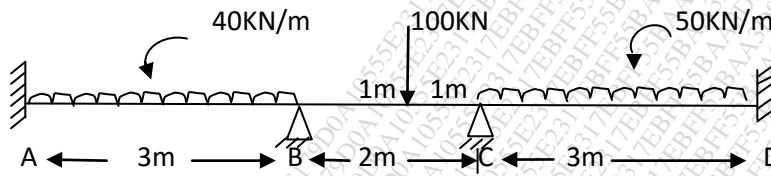


fig 6

SUBJECT CODE NO:- K-363
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(Civil) Examination Oct/Nov 2016
Advanced Surveying
(Revised)

[Time: Three Hours]

[Max. Marks:40]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 and Q.No.5 is compulsory and answer any two questions form section A and section B, apart from compulsory questions.
 - ii) Assume suitable data, if necessary, and state the same very clearly.
 - iii) Figures to the right indicate full marks.

Section A

- Q.1 Answer the following questions (any three) 06
1. Scale and Distortion of the Vertical Photograph.
 2. Define Plumb Points and Isocentres in Photogrammetry.
 3. Adjustments of the Sextant.
 4. Use of Sounding Rods/Poles and Lead lines.
 5. Explain Distortion due to height or Relief.
- Q.2 Derive an expression for distortion due to height of any point from plumb point for a truly vertical photograph. 07
- Q.3 Explain the procedure of making the soundings and any two methods of Locating Soundings? 07
- Q.4 Two photographs were taken with a phototheodolite from stations C and D, 120m apart, the line of collimation being 90° to PQ in each case. A point M appears on the photograph from C, 49.5mm to the right of the vertical line and 30mm above the horizontal line, while on the photograph from D, it appears 76.2mm to the left of the vertical line and 18mm above the horizontal line. D is cast of C. Calculate the co-ordinates of M and the difference in level of the two collimation planes, if the focal length of the camera is 150mm. 07

Section B

- Q.5 Answer the following questions. (any three) 06
1. Write down main five components of GIS.
 2. Write down Applications of Remote Sensing w.r.t. Land cover.
 3. What is Land cover change detection means, what is its necessity in GIS?
 4. Explain the basic concept of GIS?
 5. What are Active Remote Sensing & Passive Remote Sensing?
- Q.6 Explain, in detail, the use of EME (Electromagnetic Energy) and its use in Remote Sensing Surveys? 07
- Q.7 How you will utilize the knowledge of GIS in order to survey some area of an engineering interest. 07
- Q.8 Write down detail notes on "Applications of RS in Civil Engineering Surveys? 07

Subject Code : 150

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (Civil) (Revised) Examination

NOVEMBER/DECEMBER, 2016

Transportation Engineering – II

Time: Three Hours

Max. Marks : 80

"Please check whether you have got the right the question paper"

- Note: i) *Figures to the write indicate full marks.*
ii) *Q.No. 1 and Q.No. 6 are compulsory and Solve any two questions from remaining from each section.*

SECTION – A

- Q.1 A two lane national highway has a curve of radius 450m. Assuming design speed as 120 kmph, determine the length of transition curve. 10
- Q.2 (a) Explain in detail survey to be carried out for the alignment of new road. 08
(b) Explain the salient feature of first twenty year road plan. 07
- Q.3 The speed of overtaking and over taken vehicles are 60 and 80 kmph, respectively on a two may road traffic. If the acceleration of overtaking vehicles is 0.99 m/sec^2 , calculate: 15
(i) Safe overtaking sight distance
(ii) Minimum length of overtaking zone
(iii) Show with neat sketch overtaking zone and sign post.
- Q.4 (a) What is super elevation? Derive an expression for super elevation. 08
(b) Explain different types of failure in concrete road with neat sketch. 07
- Q.5 Write a short note on following (Any three): 15
(a) PIEV
(b) NHDP
(c) Maintenance of rigid pavement.
(d) Vehicle operation (Road user) cost.

SECTION – B

- Q.6 Calculate the minimum radius of circular curve for a highway designed for 110 km/hrs. maximum super elevation rate is 8% 10
- Q.7 (a) Explain CBR method of flexible pavement design with neat sketch. 08
(b) Explain Burmister's method of flexible pavement design. 07
- Q.8 Discuss the object of the following types of joints (any three) draw neat sketch. 07
(i) Expansion joint
(ii) Contraction joint
(iii) Warping joint
(iv) Longitudinal joint
- Q.9 (a) Explain IRC method of rigid pavement design. 08
(b) Explain the construction procedure of WBM alongwith material specifications. 07
- Q.10 Write a short on following (Any three) 15
(i) ESWL
(ii) Penetration macadam construction
(iii) Temperature stress in rigid pavement
(iv) Deval abrasion test.

SUBJECT CODE NO:- K-229
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination Oct/Nov 2016
Building Planning & Design
(Revised)

[Time:Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

N.B

- i) Use regular answer book for sec. A & B
- ii) Use drawing sheet for section B
- iii) Q.No1&6 are compulsory.
- iv) Write answer of any two questions from section A from the remaining.
- v) Write answer of any one question from section B from the remaining.
- vi) Draw neat sketches whenever required.
- vii) Figures to the right indicate full marks.

Section A

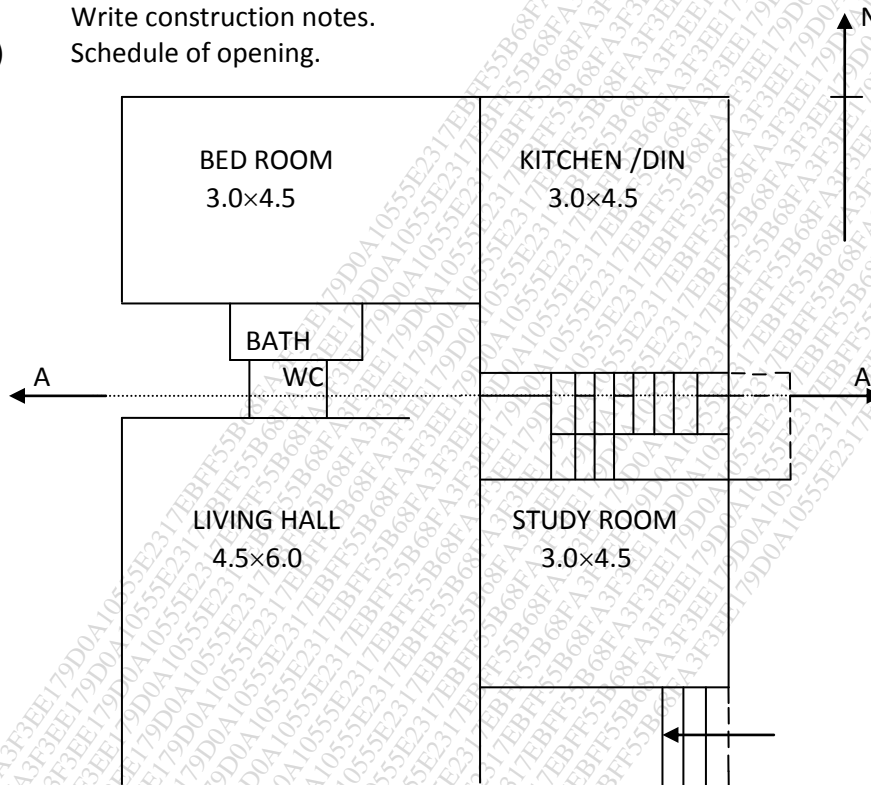
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|-----|---|----|
| Q.1 | Answer any five questions from the following. | 10 |
| | <ul style="list-style-type: none">i) Define bearing capacity.ii) What is stop proportion?iii) List out different level in construction stages.iv) What is threshold?v) Loads acting on foundation.vi) Define F.S.I.vii) What is building line?viii) Define line of nosing. | |
| Q.2 | a) Explain in detail 'Unity'. | 08 |
| | b) Write a length on 'Man Composition'. | 07 |
| Q.3 | a) What is importance of 'aspect'. | 05 |
| | b) Explain Roominess. | 05 |
| | c) What is 'Privacy'? | 05 |
| Q.4 | a) Explain importance of principles of planning in planning of a Residential Bungalow plan. | 07 |
| | b) Explain the following (any two): | 08 |
| | <ul style="list-style-type: none">i) Lay out plan.ii) Building byelaws.iii) Working Drawing. | |
| Q.5 | By assuming suitable data & standard norms, Enlist the requirement and draw the line plan of an engineering college (with civil, mechanical & Electrical Engg) with intake of 60 students in each branch. | 15 |

Section B

Q.6 The figure shown below shows a typical plan of a residential bungalow. Draw for suitable scale.

- Working drawing plan.
- Elevation.
- Sectional Elevation.
- Location & position of column.
- Write construction notes.
- Schedule of opening.

06
06
06
02
03
02



NOTE: PLAN DRAWN NOT TO SCALE ALL DIMENSIONS ARE IN METERS.

- What is landscaping? What is the important landscaping for a Hospital building?
 - What do you understand by perspective drawing? What are the fundamental concepts are such drawing.
- Write in detail on Landscaping.
 - Explain at length on two point perspective.

07
08
07
08

SUBJECT CODE NO:- K-262
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(Civil) Examination Oct/Nov 2016
Transportation Engineering-I
(Revised)

[Time: Three Hours]

[Max. Marks:80]

Please check whether you have got the right question paper.

- N.B
- Question No.1 and 6 are compulsory.
 - Attempt any two questions from the remaining in each section.
 - Figures to the right indicate full marks.
 - Assume suitable data if required.

Section A

- | | | |
|-----|---|----------------|
| Q.1 | Solve any five. | 10 |
| | <ol style="list-style-type: none"> Define Afflux. State the types of bridge foundation. Define runway. Define submersible bridge. Define scoring. Define interlocking. State types of crossing. Define Economic span. | |
| Q.2 | <ol style="list-style-type: none"> Enlist the Hydrological Data to be collected for construction of a major bridge across a river. What is economic span for a bridge? Derive the relation for the same. | 08
07 |
| Q.3 | <ol style="list-style-type: none"> Write in short about bridge classification. Describe characteristics of an ideal site for a bridge across a river. Discuss preliminary drawing to be prepared at the time of investigation. | 04
04
07 |
| Q.4 | <ol style="list-style-type: none"> What are the characteristics of an ideal airport layout? Explain in detail the procedure of orienting the runway. | 07
08 |
| Q.5 | Write short note on(any three) | 15 |
| | <ol style="list-style-type: none"> Coffer Dams. IRC Loading on bridges. Runway orientation. Bridge approaches. Pile foundation. | |

Section B

- | | | |
|-----|--|----|
| Q.6 | Solve any five. | 10 |
| | <ol style="list-style-type: none"> Define Dock and Harbors. Requirement of Railway station. Define Gauge. Enlist types of sleepers. State types of crossing. Define permanent way. Function of Ballast. Define Buckling of Rail. | |

Q.7	a) Explain the function of <ol style="list-style-type: none"> Fish plates. Fish bolts. b) Write in short automatic signaling. c) Explain the following terms. <ol style="list-style-type: none"> Coning of wheel and Creep of rails. 	04 05 06
Q.8	a) What are the requirements of an ideal permanent way? Draw the cross section of broad gauge track in embankment for a single line. b) Discuss the factors on which sleeper density depends and how the sleeper density is expressed?	08 07
Q.9	a) Differentiate between Natural and Artificial harbors. Draw the sketch of typical artificial harbors. b) Distinguish between <ol style="list-style-type: none"> Dry Docks and Wet Docks. Tidal basin and wet Docks. 	07 08
Q.10	Write short note on (any three) <ol style="list-style-type: none"> Classification of Docks and Harbors; Creep and its effect; Marshaling yard; Modern trends in Railway. Diamond crossing. 	15