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SURVEYING

4th Exam/CIVIL./5251/5167/Dec-2011

Duration: 3 Hrs. Max. Marks: 75

Section-A

Q1. Fill in the blanks 15

(i) _____ is used for quickly locating contour gradient.

(ii) Contour interval is given by _____

(iii) Repetition is the method of observing _____ angles accurately.

(iv) For a _____ traverse method of interior angles is preferred.

(v) A traverse is said to be close if it returns to the _____

(vi) Vermier A and Vermier B of a theodolite are placed at a difference of _____

(vii) _____ is a transit theodolite.

(viii) $\frac{L^2}{24R}$ is _____ of a curve.

(ix) _____ is also known as vertical stave.

(x) If the angle of intersection is $\alpha°$ then deflection angle is _____

(xi) _____ uses circular spirit level.

(xii) If the scale of the map is 1:5000, then no. of KM represented by 1 cm will be _____

(xiii) A closed contour line with one or more higher one inside it represents a _____

(xiv) For hilly areas for a scale of 1cm=100m, the contour interval will be _____ to _____

(xv) If gradient of road is 1.5 in 30, then 1m vertical interval will be attained in _____ metre.

Section-B

Q2. Attempt any 10 questions 10x3=30

(i) Define contour gradient.

(ii) For what purpose pentagraph is used?

(iii) What is the function of Abney level?

(iv) What is total station?

(v) What do you understand by GPS?

(vi) What is the function of a componsator?

(vii) What is the function of auto level?

(viii) What do you mean by remote sensing?

(ix) What are the applications of GIS technology?

(x) What are the uses of GPS?

(xi) Where vertical curve is provided?

(xii) Define degree of a curve according to chord definition?

(xiii) What you will do if you want to avoid over turning of vehicle on the road?

(xiv) How curves are classified?

(xv) How will you interpolate contour by estimation?

Section-C

Q3. Attempt any three questions 3x10=30

(i) The stadia readings with horizontal sight on a vertical staff held 50m from a tachometer were 1.285m and 1.780m. The focal length of the object glass was 250mm. The distance between the object glass and the vertical axis of the tachometer was 0.15m. Calculate the stadia interval.

(ii) Co-ordinates of two points A and B are given below. A third point C has been chosen in such a way that bearings of AC and CB are $29^0 30'$ and $45^0 45'$ respectively. Calculate the length of the lines. AC and CB

Point	Northing	Easting
A	150	200
B	1500	1300

(iii) A circular curve has a 200m radius and 65^0 deflection angle, what is its degree by
(a) Arc definition
(b) Chord definition
Assume 30m chord length

(iv) (a) What ia a transition curve? Why it is powdered and what are its requirements?
(b) Discuss the characteristics of contours

(v) Write short notes on any two
(a) EDM
(b) GIS and GPS
(c) Traversing of contours
(d) Centrifugal force and super elevation.

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ESTIMATING AND COSTING IN ELECTRICAL ENGINEERING

4th Exam/Elect/2152/5268/Dec'11

Duration 3 Hrs. 75 Marks:

Section A

Q1. Fill in the blanks 15

a. The cables are pulled out through conduits with the help of _____ wire.
b. Estimating helps us to arrange for _____, _____ and _____ before starting and project work.
c. The frequency at the consumer terminals should not vary by more than _____ percent of the declared frequency.
d. The sudden expenses are called _____.
e. A short circuit current is taken as _____ times the normal currents for calculation of size of wire.
f. A starter is not requird for a _____ H.P. motor.
g. The large motors should be provided with _____ earthing.
h. For service lines _____ proof cable should be used.
i. The armouring is done on U.G. cables for _____ projeciton.
j. The shackle insulators are fastened with pole with the help of a _____
k. The fuse provides projeciton against _____ fault.
l. For meauring insulation resistance, all switches are mode ON and all the lamps are _____.
m. The distribution transformer is wound in _____.
n. The service line join the service pole with the _____ of the consumer.
o. The light and power circuits used for connecitons should be kept _____.

Section B

Note: Attempt any six questions 6x5

Q2 i. Discuss the procedure of calculating labour charges, while designing an electrical estimating.
ii. Make a speciman tender notice to be published in news paper.
iii. Discuss the factors to be considered to determine the size of the conductor.
iv. Give reasons, why the load in a consumer's installation is to be devided into various sub circuits and estimate the number of sub circuits is to be designed in domestic installation for a load of 9 KW?
v. Draw the layout of an indoor type sub station.
vi. Draw the connection diagram of a device to be used for the protection against earth leakage and give its brief operation?
vii. Discuss, how will you control the earth resistance at desired low value.
viii. Compare the conduit and batten wiring.
ix. Discuss, how the orders for supply of items can be placed.

Section C

Note: Attempt any three questions 3x10

Q3. Draw the neat sketch of pole mounted sub station and prepare a list of material.

Q4. Explain the varius accessories used in domestic installaiton with neat sketches.

Q5. Draw and explain the pipe earthing?

Q6. Draw the neat sketch of giving service connections to a school having load of 30kw (lights and fans). Assume the distance of the school is to be 30 metre from the pole? Enlist the material required.

Q7. Estimate the material required to design a 33 kv, 3 phase overhead line supplying 20 megawatts, 0.8 legging for 1 km length.

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WORKSHOP TECHNOLOGY II

4th Exam/Mech/2553/5369/Dec'11

Duration : 3hrs M.Marks : 75

Note : (a) All questions are compulsory.
(b) Figures to the right indicate the marks allotted to the questions.
(c) Use of non-programmable calculator is permissible.

SECTION – A

Q.1 Attempt the following : **(15x1 = 15)**

(i) The _____ is a sequence of numbers listing the various angles, in degrees and the size of nose radius.

(ii) The _____ of a single point cutting tool indicates that the plane which forms the face or top of a tool has been ground back at an angle sloping from the nose.

(iii) The _____ of a single point cutting tool is the included angle when the tool has been ground wedge shaped.

(iv) The largest diameter of work that will revolve without touching the bed and is twice the height of the centre measured from the bed of the lathe is the _____.

(v) The _____ mechanism in lathe makes the carriage to engage or disengage with the lead screw.

(vi) A _____ in lathe is used to provide support to a long slender workpiece.

(vii) Operation of smoothing and squaring the surface around a hole for the seat of a nut or the head of a screw on drilling machine is called _____.

(viii) An _____ reamer is so made that it may be adjusted by very small amount to compensate for wear, or to accommodate some variation in hole size.

(ix) The _____ machine is the most accurate of among all boring machine tools.

(x) The _____ slide of the tool head of shaper has a swivel base which is held on a circular seat on the ram.

(xi) In _____ the cutting pressure acts along the length of the tool.

(xii) A _____ is a device which holds and locates a workpiece and guides and controls one or more cutting tools.

(xiii) A _____ is a device which holds and locates a workpiece during an inspection or for a manufacturing operation.

(xiv) The _____ arrangement incorporated in a jig to enable operations to be performed on the periphery of work at different angular positions.

(xv) A _____ must be short with fewer teeth with less material removal per pass.

SECTION – B

Q.2 Attempt any three of the following : **(3x5 = 15)**

(a) How do you define cutting speed and feed ? State various factors that are considered to fix cutting speed and feed.

(b) Why chucks are used ? List various types of chucks used in lathes and describe any one chuck with neat sketch.

(c) List different taper turning methods and explain with neat sketch any one of them.

(d) Describe in brief the different operations that can be performed on a horizontal boring machine.

Q.3 Attempt any three of the following : **(3x5 = 15)**

(a) In a shaper work, the length of stroke is 300 mm, number of double strokes per minute is 40 and the ratio of return time to cutting time is 1:2. Find the cutting speed.

(b) Describe various slotting tools and slotter operations.

(c) What operational factors must be considered to ensure efficient clamping of workpieces on jigs and fixtures ?

(d) Explain common methods of lubrication in machine tools.

SECTION – C

Q.4 Attempt any three of the following : **(3x10 = 30)**

(a) Explain in brief the various types of tools used on lathe and for what purpose.

(b) Describe with neat sketch the Whitworth quick return mechanism and explain its working on the machine as used in workshop.

(c) Draw a neat sketch of broach and explain the different elements of a broach. How it is used in workshop.

(d) Describe in brief the various types of clamping devices used in jigs and fixtures.

(e) Explain with neat sketch the working principle of a slotting machine.

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DATA STRUCTURE USING 'C'

4th Exam/Comp/6260/2362/Dec'11

Duration 3 Hrs. 75 Marks:

Section A

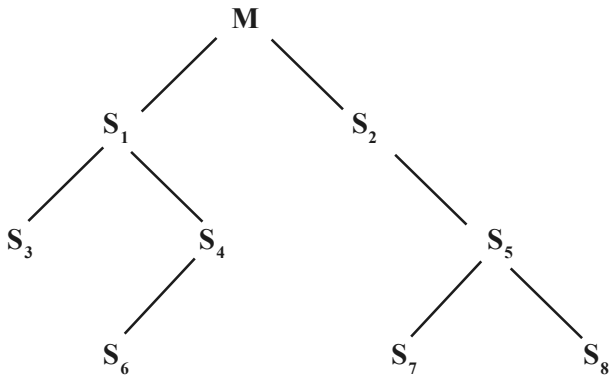
Q1. Do as directed: 15

a. The data structure whose elements are processed sequentially are called _____ data structures.
b. _____ is the example of non – linear data structure.
c. A linked list that may traverse in both directions is called _____.
d. FIFO stands for _____.
e. Insertion operaiton in stack is known as POP (T/F)
f. In _____ notation, the operators exist after its operands.
g. Binary search is _____ than linear search.
h. _____ refers to the process of Writing each node in a tree.
i. When a function calls itsself, it is known as _____.
j. Bubble sort is faster than quick sort (T/F)

Section B

Note: Attempt any five questions 6x5

Q2 i. What do you mean by a data strucutre? Explain its types with suitable examples.
ii. Write an algorithm to insert an element at the ith position in anarray.
iii. How linked list is represented in memory? Explain.
iv. Write a program in C to find the factorial of a number using recursion.
v. Write an algorithm to insert an element in a queue.
vi. Write the preorder and postorder traversal of the following binary tree.



Section C

Note: Attempt any two questions 15x2

Q3. Explain the algorithms for travesing a binary tree in pre order and post order.

Q4. Explain insertion sort algorithm with the help of a suitable example.

Q5. Write short notes on

a. Pointer variables
b. Doubly linked lists

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NETWORKS FILTERS AND TRANSMISSION LINES

4th Exam/ECE/2261/6166/Dec'11

Duration 3 Hrs. 75 Marks:

Section A

Q1. Fill in the blanks 15

a. The standing wave ratio is equal _____ when the load is perfectly matched.
b. A transmission line is distortionless if L/C = ?/?
c. Insertion loss in decibles is _____.
d. Butterworth filter has _____ reponse.
e. Phase constant in HPF is given by _____.
f. Attenuation is the term that is exactly reverse of _____.
g. The point of voltage maxima and voltage minima are separated by a distance of _____.
h. A _____ element shows linear characteristic of voltage Vs current.
i. Attenuators have applications in _____ & _____ circuit.

Section B

Note: Attempt any five questions 6x5

Q2 i. What is insertion loss in a two port network? On what factors does it depend?
ii. Define characteristic impedance of symmetrical network. Explain briefly what is propagation constant, attenuation constant and phase shift constant.
iii. What are attenutators? Derive a relation between different units of attenuation.
iv. Write a short note on active filter.
v. Explain the pirnciple of impedance matching using single stub.
vi. What are different types of transmission lines? Give atleast one application of each type.
vii. What is loading of lines? What is the function of loading of lines?

Section C

Note: Attempt any three questions 10x3

Q3. Derive the expression for characteristic impedance using π type network circuit for transmission line.

Q4. Explain the concept and working of m-derived low pass and high pass filters.

Q5. Design symmetrical T-attenuator and π attenuator if attenuation is 20db and characteristic resistance (R_o) is equal to 400 Ω.

Q6. What are standing waves and when do they occur? Derive an expression for the reflection coefficient and voltage standing wave ratio.

Q7. What are different types of distortions in transmission lines? How can the distortions be removed?

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