0807

Register Number:

Name of the Candidate:

M.E. DEGREE EXAMINATION, 2016

(WATER RESOURSES ENGINEERING AND MANAGEMENT)

(SECOND SEMESTER)

WREC-201: COMPUTATIONAL METHODS IN WATER RESOURCES MANAGEMENT

[Time: 3 Hours

May]

Maximum: 75 Marks

Answer any FIVE questions *(5×15=75)*

1. Discuss the physical, mathematical and digital models with practical applications. (15)

2. Discuss the concept of error, occurrence of error, in formation of a model. (15)

3. Discuss briefly the concept of mass energy and momentum conservation. (15)

4. Derive the St-venant unsteady flow equation. (15)

5. Discuss the various numerical methods, with its intropolation techniques used in the computation and creation of a model. (15)

6. Discuss the following:
   a) Pipe in series, parallel and equivalent.
   b) Water hammer and its effects in water distribution. (7½×2=15)

7. Write short notes on:
   a) Canal automation in methods.
   b) Mass transport model. (7½×2=15)

8. Write short notes on the following softwares:
   a) MATLAB
   b) SIMULINK
   c) QUAL 2E (3×5=15)

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Register Number: **0809**

Name of the Candidate:

M.E. DEGREE EXAMINATION, 2016

(WATER RESOURCES ENGINEERING AND MANAGEMENT)

(SECOND SEMESTER)

WREC-203: REMOTE SENSING AND GIS APPLICATIONS IN WATER RESOURCES ENGINEERING

May]

[Time: 3 Hours

Maximum: 75 Marks

Answer any FIVE questions *(5×15=75)*

1. Describe briefly the various classifications of remote sensing system. (15)

2. Discuss briefly the LAND SAT, SPOT, IRS remote sensing platforms. (15)

3. Discuss the following terms in brief.

   a) Digital processing remote sensing datas

   b) Image classification (7½×2=15)

4. Discuss briefly the basic components of G.I.S. (15)

5. Discuss briefly the Data base management systems, data base models used in GIS. (15)

6. Discuss briefly the methodology of measurement of length, perimeter and areas in GIS, used in the Thematic mapping process. (15)

7. Discuss briefly the applications of remote sensing in evaluation of water resources. (15)

8. a) Describe the regimal rainfall mapping methodology using GIS.

   b) Explain detail, how GIS is useful in Ground water potential mapping, reservoir sedimentations. (7½×2=15)

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Register Number:

0810

Name of the Candidate:

M.E. DEGREE EXAMINATION, 2016

(WATER RESOURSES ENGINEERING MANAGEMENT / ENVIRONMENTAL ENGINEERING)

(FIRST SEMESTER / SECOND SEMESTER)

ENVC-105/WREC-204: PIPE LINE ENGINEERING

May] [Time: 3 Hours

Maximum: 75 Marks

Use of Hazen William Chart Permitted
Answer any FIVE questions *(5×15=75)*

1. Describe the various distribution networks in a water supply system and state their advantages with disadvantages. (15)

2. A town with a population of 20,000 receives water from a reservoir 3000m away. Water is supplied at a rate of 200 lpcd. The difference of elevation between lowest water level in the sump and reservoir is 40m. If the demand has to be supplied in 10 hours, determine the size of main and BHP of pump. (15)

3. a) State the principles of designing pipe lines. (7½)

   b) Write short notes on network components. (7½)

4. The difference between level of catchment and service reservoir is 150m with the distance between them 48 km. The reservoirs are originally constructed by a single pipe line designed to carry 0.26 m^3/s. It was later found to increase the supply 0.36 m^3/s and decided to lay another pipe line of same diameter along the first part of the length and cross connected. Calculate the diameter of the pipe and length of second pipe. (15)

5. Discuss briefly the various classification of nodes and its application. (15)

6. Write a source code for the analysis of single-input source distribution pipe network system. (15)

7. A pipe network consists of following pipes. (15)

Pipe	Length(M)	Diameter(CM)	Friction
AB	400	30	0.014
BC	600	30	0.010
AD	500	40	0.012
DC	500	25	0.011

Inflow at A is 1m^3/s while out flows at B,C and D are 0.3,0.5 and 0.2m^3/s respectively. Find the flow in each pipe taking only one trail. The pressure at a is 100m of water. Verify the result by linear method.

8. Write short notes on direct intake from a river and intake tower in a reservoir. (15)

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0812
~~0611~~

Register Number:

Name of the Candidate:

M.E. DEGREE EXAMINATION, 2015

(WATER RESOURCES ENGINEERING AND MANAGEMENT)

(SECOND SEMESTER)

WREC - 205. SOFT COMPUTING IN WATER RESOURCES MANAGEMENT

(Common with Part Time)

May] [Time: 3 Hours

Maximum: 75 Marks

Answer any FIVE questions
Assume suitable data wherever necessary

1. Define fuzzy sets. Explain with suitable example fuzzy sets with a discrete ordered universe.
2. With a neat block diagram write about recurrent Networks.
3. Define membership function with its basic features and its types.
4. State with neat diagram Neuro-fuzzy computing.
5. State the application of Neuro-fuzzy computing in time series analysis.
6. Discuss about the simulated annealing.
7. Write short notes on the following:
   a) Activation function
   b) Hebbian learning
   c) Various learning methods in neural network.
8. Write down how fuzzy logic controller is applied in reservoir operation problem.

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Register Number: **0813**

Name of the Candidate:

M.E. DEGREE EXAMINATION, 2016

(WATER RESOURCES ENGINEERING AND MANAGEMENT)

(SECOND SEMESTER)

WREE-206 / 403 : WATER QUALITY MANAGEMENT FOR AGRICULTURE

(Common with Part-Time)

May] [Time: 3 Hours

Maximum: 75 Marks

Answer any FIVE questions *(5×15=75)*

1. a) Discuss briefly about the various water quality problems, experienced in agricultural activities. (10)

   b) Brief about the water quality guidelines. (5)

2. Briefly describe the remedial measures adopted practically to control the salinity problems. (15)

3. Brief bout the infiltration problem and its evaluation methodology. (15)

4. a) Brief about the management of toxicity problems. (7½)

   b) Brief about the crop selection pattern and its cultural practices practically adopted in agriculture. (7½)

5. Briefly describe the following: (7½×2=15)

   a) Magnesium problems

   b) Nutritional and water quality relationship.

6. Discuss briefly about the clogging problems in the nozzeles of localized drip irrigation systems. (15)

7. Discuss briefly about the applications of high carbonate water, for overhead sprinkler irrigation systems. (15)

8. Briefly describe the following:

   a) Waste water irrigation. (7½)

   b) Reuse of agricultural drainage water. (7½)

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