8. (a) Discuss the use of triangular plate bending elements. 10

(b) Explain briefly the various factors to be considered in the development of curved shell elements. 10

Roll No. .....

24519

B. Tech. 7th Semester (Civil Engg.) Examination – December, 2016

FINITE ELEMENT METHODS

Paper : CE-417-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any ***five*** questions. All questions carry equal marks.

1. (a) Explain the term 'Shape Functions'. Why polynomial terms are preferred for shape functions in finite element method ? 10

(b) Discuss the advantage and disadvantages of FEM over : 10

(i) Classical method

(ii) Finite difference method

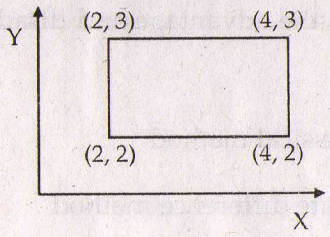
2. Using Lagrange polynomial, find the shape functions for three noded and five noded bar elements. 20

3. Determine using any weighted residual techniques the temperature distribution along a circular fin of length of 6 cm and radius 1 cm. The fin is attached to a boiler whose wall temperature is 140°C and the free end is insulated. Assume convection coefficient h = 10 W/cm^2 °C. Conduction coefficient K = 70 W/cm^2 °C and T_∞ = 40 °C. The governing equation for the heat transfer through the fin is given by 20

$$-\frac{d}{dx}\left[KA(x)\frac{dT}{dx}\right]+hp(x)(T-T_\infty)=0$$

Assume appropriate boundary conditions and calculate the temperature at every 1 cm from left end.

4. A bilateral rectangular element has coordinates as shown in figure and the nodal temperatures are T_1 = 100 °C, T_2 = 60 °C, T_3 = 50 °C, T_4 = 90 °C. Compute the temperature at the point whose coordinates are (2.5, 2.5). Also determine the 80 °C isotherm : 20



5. Write short notes on : 20

(i) Galerkin's method

(ii) Variation Method

(iii) Hermite Polynomials

6. (a) Explain the isoparameteric concept in finite element analysis. 10

(b) Explain the terms isoparameteric, subparameteric and superparameteric elements. 10

7. A beam of length 10 m, fixed at one end and supported by a roller at the other end carries a 20 kN concentrated load at the centre of the span. By taking the modulus of elasticity of material as 200 GPa and moment of inertia as 24×10^{-6} m^4, determine : 20

(i) Deflection under load

(ii) Shear force and bending moment at mid span

(iii) Reaction at supports

Roll No. .....

24228

B. Tech. 5th Sem. (EE)

Examination – December, 2016

POWER SYSTEMS-I

Paper : EE-315-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is ***compulsory*** and attempt *one* from each Section. All questions carry equal marks.

1. (a) Write short note on single phase representation of balance three phase network. 5

(b) Write short note on comparison of load flow methods. 5

(c) Write short note on incremental fuel cost for a power plant. 5

(d) Write short note on ACE(Area Control Error) 5

SECTION – A

2. Explain steady state model of Synchronous Generator in detail. 20

3. Write short note on : 20

(a) Complex power

(b) Current breaker

SECTION – B

4. Draw neat & clean Flow Chart of Gauss-Siedel method & explain its algorithm in detail. 20

5. The load flow data for the sample power system are given below. The voltage magnitude at bus 2 is to be maintained at 1.04 p.u. The max & min reactive power limits of the generator at bus 2 are 0.35 & 0.0 p.u. respectively. Determine the set of load flow equation at the end of first iteration by using N-R method : 20

Bus Code	Impedance	Line Charging Admitance
1 – 2	0.08+j0.24	0.0
1 – 3	0.02+j0.06	0.0
2 – 3	0.06+j0.18	0.0

Schedule of generation of loads :

Bus Code	Assumed	Generation		Load	
	Vol.	MW	MVAR	MW	MVAR
1	1.06+j0.0	0	0	0	0
2	1.0+j0.0	0.2	0.0	0.0	0.0
3	1.0+j0.0	0	0	0.6	0.25

SECTION – C

6. Write short note on optimal operation of generator on bus bar. 20

7. Explain optimal scheduling of hydrothermal system in detail. 20

SECTION – D

8. Explain load frequency control of single area in detail. 20

9. Explain Automatic voltage control in detail. 20

Roll No. .....

24447

B. Tech. 7th Semester (ECE) Examination – December, 2016

WIRELESS SENSOR NETWORK

Paper : ECE-411-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. **1** is ***compulsory***. Attempt ***one*** question from each Unit.

1. (a) What is a wireless sensor network ? 4

(b) What are the hardware components of a wireless sensor network ? 4

(c) What are the requirements of a MAC protocols ? 4

(d) What is wake up radio concept ? 4

(e) What is clustering ? 4

UNIT – I

2. What are the challenges and the required mechanisms of a Wireless Sensor network ? 20

3. What are the various applications of wireless sensor networks and explain any two with an example each. 20

UNIT – II

4. Explain in detail the hardware components used in WSN architecture. 20

5. Explain in detail about the Gateway concepts. 20

UNIT – III

6. Explain the design approaches and performance of S-MAC protocol. 20

7. Discuss in detail the Transceiver characteristics and structure. 20

UNIT – IV

8. Explain in detail about different topology control mechanisms. 20

9. Explain about various clustering mechanisms in WSN. Also explain in detail about the sensor tasking and control. 20

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7. Write a detailed note on power substation automation and equipment condition monitoring system. 20

SECTION – D

8. Write notes on :

   (a) Substation & feeder level automation. 10

   (b) Automatic mapping and facility management. 10

9. Write notes on :

   (a) Power system & equipment maintenance. 10

   (b) Trouble call management. 10

Roll No. .....

24438

B. Tech. 7th Semester (EEE) Examination – December, 2016

PLCS & SCADA

Paper : EE-407-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*.

1. (a) State and explain advantages and disadvantages of PLC in brief.

   (b) Explain SCADA communication in an electrical power system.

   (c) Write a short note on energy management system.

(d) Write a short note on automatic mapping and facility management. $5 \times 4 = 20$

SECTION – A

2. (a) Explain central processing unit in detail along with the three important parts in it. 10

(b) Write a PLC program to implement the conditional logic statements below : 10

(i) A PLC output is to switch on if any of three input is switched on.

(ii) A PLC output is to switch on if any of three input is switched on but not two or more.

(iii) A PLC output is to switch on if any two output is switched on, but not the third.

3. (a) List various functions of SCADA in electrical operations industry. 10

(b) Define and explain : HMI, SCADA server, Ladder logic. 10

SECTION – B

4. (a) How SCADA system is used in power generating station control room ? Explain with an example. 10

(b) Discuss the role of SCADA system in a power grid. 10

5. Explain the role of national control centre and regional control centre in a modern power system. Use diagrams to depict the communication between these two. Discuss the use of automatic generation control with a SCADA system in a power system facility. 20

SECTION – C

6. (a) Discuss the advantages of inter utility economy energy evaluation. 10

(b) Write a detailed note on security analysis of power systems. 10

B. Tech. 3rd Semester (ME) F-Scheme
Examination, December – 2016
MATERIAL SCIENCE
Paper–ME-207-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt any **five** questions in total, at least **one** question from each section. **Question no. 1 is compulsory**. Each question carries equal marks. (20 marks)*

1. Explain the following –

(a) Space Lattice

(b) Induction Hardening

(c) Objectives of heat treatment processes

(d) Properties of Martensite

(e) Strain ageing

(f) Bauschinger's effect

(g) Binary phase diagrams

(h) Types of fracture

(i) Critical cooling rate

(j) Tempering. 20

Section–A

2. (a) Discuss the classification of crystal imperfections in details. 14

   (b) Discuss atomic packing factor and number of atoms per unit cell in detail. 6

3. (a) What different types of structures are found in different materials ? How are these formed ? 10

   (b) What is crystallography ? Explain crystal structure, space lattice and crystal directions. 10

Section–B

4. (a) Explain the Iron carbon equilibrium diagram in detail. What are its limitations ? 10

   (b) Explain the TTT curve with its applications. 10

5. (a) Explain the difference between annealing and normalizing in detail. 10

   (b) Explain any two surface hardening techniques in detail. 10

Section–C

6. (a) What do you understand by plastic deformation ? Explain mechanism of plastic deformation. 10

   (b) Explain the recovery, recrystallisation and grain growth in detail with application. 10

7. (a) Explain types and mechanism of fractures in detail. 10

   (b) Explain fatigue limit and the factors affecting fatigue. 10

Section–D

8. (a) Define creep and creep limit. How creep test is carried out and explain creep curve. 10

   (b) Discuss dry and wet corrosion. Explain the methods of corrosion protection. 10

9. (a) Explain various types of polymers and formation of polymers. 10

   (b) What are ceramics, types of ceramics, their properties and formation techniques ? 10

UNIT - III

6. What do you understand by primary and secondary distribution channels partners ? How are they different from each other ?

7. How has retail culture impacted the distribution strategies of the companies ?

UNIT - IV

8. What is meant by market logistics and supply chain management ? How is logistics planning linked to the Channel Management ?

9. Write a detailed note on International Sales Management.

Roll No. .....

56090

MBA 2 Year 4th Semester (N.S.) (Re-appear) Examination– December, 2016

SALES & DISTRIBUTION MANAGEMENT

Paper : MBA-422

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : The question paper will have two sections. Section A shall comprise 8 short questions carrying two marks each which are **compulsory**. Answer to each question should not exceed 50 words normally. Section B shall comprise 8 questions (2 questions from each unit). The student will be required to attempt

four questions (**one** question from each unit). All questions will carry equal marks.

SECTION - A

1. Short answer type questions :

(a) What do mean by Sales Management ?

(b) Define Channel Training Programme.

(c) What are different methods of selecting distribution channels ?

(d) What is the importance of Sales Contest ?

(e) What do you mean by channel conflicts and resolutions ?

(f) What are the roles of channel members in distribution management ?

(g) Define the purpose of sales territories.

(h) What are compensation plans ?

SECTION - B

UNIT - I

2. Personal Selling is a two way communication best suited to the consumer products having low brand loyalty ? Explain.

3. What are the various techniques of compensating and motivating the sales force ? Explain.

UNIT - II

4. Suggest the criteria for evaluating the sales persons for consumer product division of a company.

5. "Quotas can act as a motivator as well as de-motivator". Comment.

9. Explain the following : 20

(a) Group technology layout

(b) Planning the introduction of group technology and group technology advantages.

Roll No. .....

24261

B. Tech. 5th Semester (ME)

Examination – December, 2016

MANUFACTURING TECHNOLOGY - II

Paper : ME-309-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* Questions in total, at least *one* question from each section. question no. 1 is ***compulsory***. Each question carries equal marks 20 marks .

1. Explain the following : 20

(a) Milling Fixtures

(b) Principle of Electron beam machining

(c) Difference between Jigs and Fixtures

(d) CNC Machines

(e) Orthogonal cutting

(f) Milling Tools

(g) Mechanism of metal cutting

(h) Clamping devices

(i) Merchant cutting force circle

(j) Unconventional machining processes

SECTION – A

2. (a) What is the effect of cutting speed, depth of cut and feed rate on the forces on cutting tool ? 10

(b) Explain the mechanism of chip formation. Also explain the continuous chips with built up edge. 10

3. (a) What is tool life ? Explain the different types of tool wear. 10

(b) Explain the purpose and types of cutting fluids and effect of cutting fluids on tool life. 10

SECTION – B

4. (a) With the help of neat sketch, explain the material removal, surface finish, advantages and application in Electrochemical grinding. 10

(b) With the help of neat diagram, explain the working of LBM. What are the critical parameters and limitations of LBM ? 10

5. (a) How to determine that the jig and fixtures for a particular application will be economical ? What are the advantages of jigs and fixtures ? 10

(b) How work pieces are located ? What is meant by 3-2-1 principle of location ? What is the best method to locate a rough surface ? 10

SECTION – C

6. (a) Explain the two axes part programming for milling operation with example 10

(b) Explain the classification on NC system. Also explain the CNC and DNC systems. 10

7. (a) Explain in detail how programming is done for NC machine tool ? 10

(b) Discuss the advantages of CNC system. 10

SECTION – D

8. Explain the following : 20

(i) Definition, concept and working of group technology.

(ii) Stages for adopting group technology.

Roll No. .....

24424

B. Tech. 7th Semester (Electrical Engg.) Examination – December, 2016

COMPUTER APPLICATIONS TO POWER SYSTEM ANALYSIS

Paper : EE-409-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions out of nine questions. Question No. **1** is ***compulsory***. Students have to attempt ***one*** question from each of four Sections.

1. (a) What is the importance of power flow studies ?

(b) What are the conditions for choosing slack bus ?

(c) Explain sparsity.

(d) Explain per fault current condition.

(e) Compare GS & NR method.

SECTION – A

2. Explain growth of power system.

3. Explain Ferranti effect in transmission line & calculate the performance of short transmission line.

SECTION – B

4. Explain formation of Y bus using singular transformation.

5. Explain NR method for load flow study & write its algorithm.

SECTION – C

6. Explain symmetrical components in power system. What is approximate load flow studies ?

7. Explain various digital types of faults in power system.

SECTION – D

8. Explain various states in SCADA system.

9. Describe various MATLAB block set in power system.

Roll No. .....

24440

B. Tech. 7th Semester (ECE) Examination – December, 2016

WIRELESS COMMUNICATION

Paper : ECE-405-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions. Question No. 1 is *compulsory*. Attempt *one* questions from Sections.

1. (a) How the channels are assigned ? 5

(b) Differentiate 2G and 3G networks. 5

(c) Explain the Erlang formula. 5

(d) Define paging systems. 5

SECTION – A

2. (a) Explain the evolution of mobile radio communication. 10

   (b) Explain the cordless telephone systems. 10

3. (a) Differentiate between WLL and WLAN. 10

   (b) Explain the process of making a mobile call. 10

SECTION – B

4. (a) Explain the concept of frequency reuse. 10

   (b) Discuss the different type of hand off strategies. 10

5. (a) With a block of a basic cellular system, explain its various functional modules. 10

   (b) Explain spread spectrum multiple access. 10

SECTION – C

6. (a) Discuss the measurement capacity of a cellular systems. 10

   (b) Explain different features of TDMA over FDMA. 10

7. (a) Write a short note on packet ratio. 10

   (b) Discuss the different wireless data services. 10

SECTION – D

8. (a) Discuss CDMA cellular Radio Networks. 10

   (b) Draw and explain block diagram of ISDN. 10

9. (a) Discuss different types of traffic routing used in wireless networks. 10

   (b) Discuss space division multiple access. 10

———————

SECTION – D

8. (a) Give a logical flow chart for single server and parallel server simulation model. 10

(b) Three points are chosen at random on the circumference of a circle. Find by Monte Carlo method the probability that they lie on the same semi-circle. 10

9. (a) With suitable example discuss laplace criterion (Bayes criterion). 6

(b) With suitable example describe criterion for realism (Hurwicz criterion). 6

(c) A newspaper boy has the following probabilities of selling a magazine :

No. of Copies Sold	Probability
10	0.10
11	0.15
12	0.20
13	0.25
14	0.30

Cost of a copy is 30 paise and sale price is 50 paise. He cannot return unsold copies. How many copies should he order ? 8

Roll No. .....

24478

B. Tech. 7th Semester (ME)

Examination – December, 2016

OPERATION RESEARCH

Paper : ME-405-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is ***compulsory***. Attempt ***five*** questions in total by selecting at least ***one*** question from each Section. All question carry equal marks.

1. Discuss about following : $4 \times 5 = 20$

(a) Decision making under certainity

(b) Float in network

(c) Stepperg stone method

(d) Post optimality

SECTION – A

2. (a) "Operation research is a tool for decision support system." Justify. 10

(b) What are the ways of improving productivity ? Discuss the role of operation research in improving the productivity. 10

3. (a) Describe the assumptions made in Linear Programming. 5

(b) Solve the LP problem graphically : 15

Maximize $Z = 100X_1 + 50X_2$

Subject to :

$$4X_1 + 6X_2 \leq 24$$

$$X_1 \leq 4$$

$$X_2 \leq 4/3$$

$$X_1, X_2 \geq 0$$

SECTION – B

4. (a) Describe zero-one programming model for assignment problem and discuss types of assignment problem with suitable examples. 15

(b) Discuss practical application of transportation model. 5

5. (a) Prove that dual of a dual is primal. 5

(b) Solve the following LP problem using the result of its dual problem. 15

Minimize $Z = 24X_1 + 30X_2$

Subject to :

$$2X_1 + 3X_2 \geq 10$$

$$4X_1 + 9X_2 \geq 15$$

$$6X_1 + 6X_2 \geq 20$$

$$X_1, X_2, \geq 0$$

SECTION – C

6. (a) Discuss the application areas of queuing theory. 5

(b) Discuss in detail a deterministic queuing model. 5

(c) Vehicles pass through a toll gate at a rate of 90 per hour. The average time to pass through the gate is 36 seconds. The arrival rate and service rate follow Poisson distribution. There is complaint that the vehicles wait for long duration. The authorities are willing to install one more gate to reduce the average time to pass through the toll gate to 30 seconds if the idle time of the toll gate is less than 10% and the average queue length at the gate is more than 5 vehicles. Check whether the installation of the second gate is justified. 10

7. (a) Distinguish between resource leveling and resource allocation. 5

(b) Consider the data of a project as shown in table :

Activity	Normal Time (weeks)	Normal Cost (Rs.)	Crash Time (weeks)	Crash Cost (Rs.)
1-2	13	700	9	900
1-3	5	400	4	460
1-4	7	600	4	810
2-5	12	800	11	865
3-2	6	900	4	1130
3-4	5	1000	3	1180
4-5	9	1500	6	1800

If the indirect cost per week is Rs. 160, find the Optimal crashed project completion time. 15

(b) What do you mean by 'Economics of nuclear power plants' ? 10

SECTION – D

8. (a) Discuss with neat diagram the working of a 'Thermionic power generation system'. 10

(b) Discuss the working of geothermal power plants. 10

9. (a) Describe, with neat sketch, the working and features of a Wind power plant. 10

(b) Discuss diversity factor. Describe how power is generated by MHD. 10

Roll No. .....

24479

B. Tech. 7th Semester (ME)

Examination – December, 2016

POWER PLANT ENGINEERING

Paper : ME-407-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in total, selecting ***one*** question from each Section. Question No. 1 is ***compulsory***. Each question carries equal marks.

1. Discuss the following : 5 × 4 = 20

(a) Methods of measurement for rainfall and run-off

(b) Re-powering system

(c) Breeder reactor

(d) MHD power generator

SECTION – A

2. (a) Discuss the various factors for selection of power plants. 10

(b) Calculate the power that can be developed from a hydro-electric power station having the following data. Catchment area = 100 sq. km.; average value of annual rainfall = 120 cm; Run-off = 80%; available head = 300 m; overall efficiency of the power station = 75%. 10

3. (a) How does a modified Rankine cycle differ from a Rankine cycle ? Write also the expression of modified Rankine efficiency. 10

(b) Why is governing of hydraulic turbines necessary ? Explain the governing mechanism of a Kaplan turbine. 10

SECTION – B

4. (a) Draw a line diagram of in plant coal handling system and explain the equipment used at different stages. 10

(b) How would you make an economic analysis of the combined operation of the hydro and steam power plants ? 10

5. (a) Explain the different methods used for supplying pulverized fuel to the combustion chambers of the boilers with their advantages and disadvantages. 10

(b) An annual load duration curve of a system of loads is a straight line with maximum of 12 MW at the beginning and 2 MW at the end of the year. Annual costs of base and peak load stations are given below :

C1 = 8000 + Rs. 75/kW + 3 paise/kWh (base load)

C2 = 6000 + Rs. 55/kW + 4 paise/kWh (peak load)

Determine the following : 10

(i) Duration of time when peak load station will work in order to obtain the minimum annual cost.

(ii) The lowest overall cost per kW (in paise).

SECTION – C

6. Draw neat diagrams of PWR and BWR type reactor and explain their working principle and give their advantages. Also discuss a moderator in nuclear reactor. 20

7. (a) Determine the load factor at which the cost of supplying a unit of electricity is same in Diesel station as in a steam station if the respective annual fixed and running charges are given below : 10

Diesel : Rs. (40/kW + 0.06/kWh).

Steam : Rs. (160/kW + 0.015/kWh).

(b) Explain in detail the need and functions of ECGC in international trade operations.

7. Describe the schemes of EXIM BANK which help exporters.

UNIT - IV

8. What are special economic zones ? Highlight their role in improving exports.

9. What is an EOU ? How does it aid in exports and discuss the procedure for setting up such EOU's.

Roll No. .....

56087

MBA 2 Year 4th Semester (NS) (Re-appear) Examination– December, 2016

INTERNATIONAL LOGISTICS

Paper : MBA-419

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Section A is **compulsory**. Attempt any **four** questions from Section B selecting at least **one** questions from each unit. All questions carry equal marks.

SECTION - A

1. (a) "India has adequate institutional infrastructure available for exports". Justify.

(b) Explain the benefits of undertaking export orders under Letter of Credit.

(c) Differentiate between packaging and packing.

(d) Discuss the need and objectives of logistics management.

(e) Explain the factors influencing transportation.

(f) What are the services offered by third party logistics provider ?

(g) Explain the types of cargos with its purpose.

(h) What is the difference between SEZ and EOU ?

SECTION - B

UNIT - I

2. (a) What do you consider as the macro forces impacting the development of world trade ? Show by examples how they are changing the nature of international business.

(b) How can an export organization be created ? Discuss the registration regulations and licensing requirements.

3. (a) Explain the nature, significance, objectives and components of International logistics management.

(b) Based on what factors will you select a product for exports ?

UNIT - II

4. Enlist the institutions in India which are financing export. Discuss in detail the role of these institutions for financing exports.

5. (a) Discuss the role of forwarding and clearing agents.

(b) Discuss the role and benefits of pre-shipment finance.

(c) What is post-shipment finance ? Explain its various methods and discuss the procedure of export under deferred payments.

UNIT - III

6. (a) Explain the risks covered and not covered under credit risk insurance.

8. (a) What is authoring tool ? What are the salient features of a good authoring tool ? Illustrate how an authoring tool helps in creating multimedia application. 10

(b) Why digital video/audio is preferred over analog video/audio ? Illustrate. 6

Roll No. .....

67111

MCA 3rd Semester (with Old Notes)

Examination – December, 2016

COMPUTER GRAPHICS & MULTIMEDIA

Paper : MCA-301

Time : Three Hours] *[Maximum Marks : 80*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all by selecting at least *one* question from each Unit. All questions carry equal marks.

UNIT – I

1. (a) What do you understand by a Graphics Software ? What are salient features of a good Graphics Software ? Explain. 8

(b) What is Computer Graphics ? State its classification(s) and outline the differences among these along with their application areas. 8

2. Differentiate between the following :

(a) LCD and Plasma Display Systems. 8

(b) Raster Scan and Random Scan Systems. 8

UNIT – II

3. (a) What is anti-aliasing ? How is it achieved ? Illustrate its significance. 6

(b) What is Scan-Conversion ? What steps are required to plot a line whose slope is between 0 and 45 degree using Bresenham's method ? Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from screen coordinate (4, 6) to screen coordinate (14, 10). 10

4. (a) How Flood-fill algorithm is different from Boundary-fill algorithm ? Illustrate. 7

(b) What is mid-point circle drawing algorithm ? Implement this algorithm for drawing a circle with radius, r =10 and centre as (0, 0). 9

UNIT – III

5. (a) Perform a 45° rotation of triangle A(0, 0), B(1, 1), C(5,2) : 8

(i) About the origin

(ii) About P (–1, –1)

(b) What do you understand by Composite Transformation ? Illustrate the concept by taking a suitable example of your choice. 4

(c) What is meant by distortion ? How can distortion be removed in viewing transformation ? 4

6. (a) Given points P_1 (1, 2, 0), P_2 (3, 6, 20), and P_3 (2; 4, 6) and a viewpoint C(0, 0, –10) , determine which points obscure the others when viewed from C. 6

(b) What is Sutherland-Cohen Clipping Algorithm ? Illustrate the same through an example. 5

(c) Differentiate Normalized-, World-, and Physical Device-Coordinates. 5

UNIT – IV

7. (a) What do you mean by multimedia ? What are important multimedia components ? Discuss role of each component. 8

(b) What is animation ? What are different types of animation ? Discuss their pros and cons. 8

8. (a) What are organizational security policies ? Discuss their relevance in the current scenario. 8

(b) What are ethical issues in computer security ? Illustrate. 8

Roll No. .....

67215

MCA 5th Semester (with old notes) Examination – December, 2016

COMPUTER SECURITY

Paper : MCA-505

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all by selecting questions selecting *one* question from each Unit. All questions carry equal marks.

UNIT – I

1. What is computer security ? What are its goals and objectives ? How vulnerabilities, threats, attacks and control measures are inter-related ? Illustrate through a suitable example. 16

2. (a) How do you compare DES and AES ? Illustrate suitability of each standard. 8

(b) What characteristics would make an encryption absolutely unbreakable ? What characteristics would make an encryption impractical to break ? Explain. 8

UNIT – II

3. (a) What are security models ? What is the purpose of these models ? Explain two popular models highlighting properties that characterize these models. 8

(b) What are different security methods for an operating system ? Illustrate. 8

4. (a) What is program security ? What are important security concerns specific to programs ? Illustrate relevance of each. 8

(b) What is trusted operating system ? What characterizes a good trusted operating system ? Explain. 8

UNIT – III

5. (a) What are various levels of protection that users might apply to code or data ? Illustrate. 8

(b) What are IDSs ? What are its types ? What are their goals ? Discuss. 8

6. (a) What is security in networks ? What are threats in networks ? How can these be controlled ? Illustrate. 8

(b) What are multilevel database ? What is the purpose of encryption in a multilevel secure DBMS ? Discuss. 8

UNIT – IV

7. (a) What is protection for computer objects ? Compare Copyright, Patent and Trade Secret Protections. 8

(b) What do you understand by a security plan ? What are the factors that should be considered when developing a security plan ? Discuss. 8

B. Tech. 3rd Semester (AUE) F-Scheme
Examination, December – 2016
ENGG. ECONOMICS
Paper–HUM-201-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt **five** questions in all. **Question no. 1 is compulsory**. Rest of the **four** questions should be answered from each section. All questions carry equal marks.*

1. Explain the following in short from :

(i) Define Economics
(ii) What is Economic Problem ?
(iii) What is Marginal Utility ?
(iv) Features of Perfect Competition.
(v) Factors of Production.
(vi) VAT
(vii) Money Cost.
(viii) External Economics
(ix) Income Elasticity of Demand.
(x) Opportunity Cost. 2×10=20

Section–A

2. Critically examine Robbin's Definition of Economics. (20)

3. What is Utility ? Discuss the law of Diminishing Marginal Utility. (20)

Section–B

4. Explain the law of Demand. Why does demand curve slope downwards ? (20)

5. Write short notes on :

   (a) Internal economics and diseconomies of scale. (10)

   (b) Law of variable proportions. (10)

Section–C

6. Define Monopolistic Competition. What are its main features ? (20)

7. Write short notes on :

   (i) Average Cost and Marginal Cost (10)

   (ii) Fixed Cost and Variable Cost. (10)

Section–D

8. Explain the role of demand and supply in price determination. (20)

9. Write short notes on –

   (a) WTO (10)

   (b) Privatization – Merits and Demerits. (10)

B.Tech. 3rd Semester (Civil Engg.) F Scheme
Examination, December–2016
FLUID MECHANICS–I
Paper–CE–205–F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt any **five** questions.*

1. (a) Find the total pressure and position of center of pressure on a triangular plate of base 2m and height 3m which is immersed in water in such a way that the plan of the plate makes an angle of 60° with the free surface of the water. The base of the plate is parallel to the water surface and at a depth of 2.5 m from water surface.

   (b) Write short notes on determination of compressibility. Newtonian and Non Newtonian fluids. 20

2. Define and distinguish between stream line, path line and streak line. What is meaning of flow net ? Can flow be used very near to boundary ? 20

3. Derive the Bernoulli's Equation along a stream line giving its assumption made. List out its engineering applications. 20

4. Write short notes on important dimensionless numbers and their significance geometric, kinematic and dynamic similarity. 20

5. A laminar flow is taking place in a pipe of diameter of 200 mm. The maximum velocity is 1.5 m/s. Find the mean velocity and radius at which this occur. Also calculate the velocity at 4 cm from the wall of pipe. 20

6. An oil of specific gravity 0.8 is flowing through a venturimeter having inlet diameter 20 cm and throat diameter 10 cm. The oil-mercury differential manometer shows a reading of 25 cm. calculate the discharge of oil through the horizontal venturimeter. Take $C_d = 0.98$. 20

7. For the velocity profile for laminar boundary layer

$$\frac{u}{U} = \frac{3}{2}\left(\frac{y}{\delta}\right) - \frac{1}{2}\left(\frac{y}{\delta}\right)^2$$

Determine the boundary layer thickness, shear stress, drag force and coefficient of drag in terms of Reynolds number. 20

8. Write short notes on

(a) Prandtl mixing length hypothesis

(b) Hydraulically smooth and rough pipes. 20