Code No. 11433 / CBCS

FACULTY OF ENGINEERING

B.E. (Civil/EE/Inst/IT) IV – Semester (CBCS) (Main & Backlog) Examination,

May / June 2019

Subject: Managerial Economics and Accountancy

Time: 3 Hours **Max.Marks: 70**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (10x2 = 20 Marks)

1	Define managerial economics	2
2	Explain demand function	2
3	Briefly explain about perfect market	2
4	What is fixed capital?	2
5	What is Book-Keeping Accountancy? Explain.	2
6	What is Trial Balance?	2
7	Explain about elasticity of demand	2
8	Define duopoly	2
9	What are the sources of capital?	2
10	Explain Fixed cost and variable cost.	2

PART – B (5x10 = 50 Marks)

11	a)	Explain the usefulness of Managerial Economics to Engineers.	5
	b)	Explain the concept of Marginalism and equi-marginalism.	5
12	a)	Write the properties of Isoquants.	5
	b)	Price-output determination under perfect competition.	5
13	a)	Write any three accounting concepts.	6
	b)	Write journal entries for the following transactions. 1-1-2018 Srika nth commenced business with capital Rs. 50,000 2-1-2018 Deposited in bank Rs. 20,000 3-1-2018 Purchased goods for cash Rs. 5,000 4-1-2018 Sold goods to Suresh Rs. 3,000	4
14	a)	What are the advantages of break-even analysis.	5
	b)	Calculate: P/V ratio, B.E.P (units and value) from the following information: Fixed cost Rs. 60,000 Selling price Rs. 42 P.U. Variable cost Rs. 32 P.U.	5
15	a)	Calculate the pay back period from the following details: Cost of equipment is Rs. 50,000	5

Year	1	2	3	4	5
Rs.	15,000	20,000	25,000	15,000	10,000

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b) Calculate NPV from the following information of which cost of machine is Rs. 1,00,000. 5

Year	1	2	3	4	5
Rs.	10,000	30,000	40,000	60,000	40,000

Rate of return = 10%.

16 From the following Trial Balance of Mr. Rao prepare final accounts. 10

Debit	Rs.	Credit	Rs.
Opening stock	10,000	Sales	50,000
Purchases	40,000	Purchase returns	1,000
Machinery	60,000	Interest received	2,000
Wages	2,000	Creditors	10,000
Salaries	5,000	Capital	1,00,000
Rent	1,000		
Cash	6,000		
Bank	9,000		
Furniture	12,000		
Sundry debtors	14,000		
Bills receivable	4,000		
	1,63,000		1,63,000

Adjustments:
1) Closing stock Rs. 2,0,000
2) Outstanding salaries Rs. 3,000
3) Make provision for bad debts Rs. 4,000
4) Depreciation machinery by Rs. 2,000
5) Prepaid rent Rs. 200.

17 a) Explain law of demand and its exception. 5

b) What is demand forecasting? Explain in detail. 5

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Code No. 11177 / S

FACULTY OF ENGINEERING

B.E. 4/4 (Civil) I – Semester (Suppl.) Examination, May / June 2019

Subject: Surface and Ground Water Management
(Elective – I)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1 Discuss the steps involved in plan formulation of water management plan. [3]
2 Enumerate the characteristics of system analysis. [3]
3 Highlight various types of Optimization Techniques. [3]
4 State the objectives of artificial recharge. [3]
5 Discuss the advantages and disadvantages of Induced method of recharge. [3]
6 Explain the concept of Wastewater reuse in present day context. [2]
7 What are various types of water resources systems? Explain each with one example. [2]
8 Define the terms: Unbounded solution, Basic and Non- Basic Variables. [2]
9 What are the applications of Modeling techniques in groundwater management [2]
10 State the applications of Dynamic Programming. [2]

PART – B (5x10 = 50 Marks

11 a) Explain the applications and basic problems in Water Resources Systems Analysis. [5]
b) What is the necessity of water resources planning and Analysis? Explain with any suitable example. [5]

12 a) Differentiate between Simulation techniques and Optimization Techniques. [5]
b) Discuss the general steps involved in solving a linear programming problem. [5]

13 a) Explain in detail along with its relevance to water management plan about the following: [5]
i) Salt balance and
ii) Conjugative use
b) What are the required data collection and the corresponding investigations for proper management of groundwater? Explain in brief. [5]

14 a) List out the basic requirements of Artificial Recharge Projects. Explain in detail about the Recharge Well Method. [6]
b) What are Recharge Mounds? Explain their use. [4]

15 a) Explain the Representation process and characteristics of Dynamic Programming problems. [6]
b) Differentiate between the principle involved in Porous media models and Analog models. [4]

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16 A farmer has a 120 acre farm. He can sell all tomatoes, lettuce or radishes and can raise the price to obtain Rs.1.25 per kg for tomatoes, Rs.0.95 a head for lettuce and Rs.3.00 per kg for radishes. The average yield per acre is 2000kg.of tomatoes, 3000 heads of lettuce and 1150 kg of radishes. Fertilizers are available at Rs.0.75 per kg and the amount required per acre is 100 kg for each tomatoes and lettuce and 50kgs for radishes. Labour required for sowing, cultivating and harvesting per acre is 5 man-days for tomatoes and radishes and 6 man- days for lettuce. A total of 400 man-days of labour are available at Rs.25.00 per man-day. Formulate LP model to maximize the farmer's profit. [10]

17 a) Explain different types of Simulation models. [6]

b) Discuss with an example the concept of groundwater management. [4]

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Code No. 11178/S

FACULTY OF ENGINEERING

B.E. 4/4 (Civil) I-Semester (Suppl.) Examination, May / June 2019

Subject: Prestressed Concrete (Elective - I)

Time: 3 hours **Max. Marks: 75**

Note: Answer all questions from Part-A and any FIVE questions from Part-B.

Part - A (25Marks)

1. What is a principle of prestressing? 2
2. Differentiate between pre-tensioning and post-tensioning system. 3
3. Define a pressure line. 2
4. Explain the concept of load balancing 3
5. Distinguish between web-shear, Flexure-shear and flexural cracks in concrete beam with sketch. 3
6. List the different flexural failure modes in prestressed concrete beam. 2
7. State the factors influencing deflection of a prestressed concrete member 3
8. What is a kern point? 2
9. Sketch the transmission of forces and tensile stress distribution in an end block with a single anchorage. 3
10. What is a concordant cable profile? 2

Part - B (50 Marks)

11. A prestressed concrete beam 150x300 mm deep is prestressed with wires (area=300 mm^2) located at 100 mm from the bottom carrying an initial stress of 1200 N/mm^2. The span of the beam is 6 m. Calculate the percentage loss of prestress and final prestressing force in wires when the beam is post-tensioned. Take Es = 205 kN/mm^2; Ec=30 kN/mm^2; Relaxation of steel stress = 5% of initial stress; shrinkage of concrete = 2.5 x 10^{-4}; creep coefficient = 1.5; slip at anchorage = 2 mm and friction coefficient = 0.002/m. 10

12 A cantilever beam of span 3 m is 200 x 300 mm in section. It is prestressed with effective prestressing force of 500 kN, which is located at a constant distance of 50 mm from the tension edge. Determine the maximum concentrated load at free end it can carry in addition to its own self weight such that no tensile stress in the concrete. Also determine maximum compressive stress developed in the concrete under this load. Concrete weighs 24 kN/m^3. 10

13 A prestressed girder has to be designed to cover a span of 9m. to support a uniformly distributed load of 10 kN/m. M 40 grade concrete is used for casting the girder. The permissible stress in compession is 13 MPa and 1.2 MPa in tension. Assume 20% losses in prestressing during service load conditions. The girder consists of a T-section with flange 300 mm wide and 100 mm thick. The web is 100mm thick and 500 mm deep. Check the adequacy of section provided. Also design minimum prestressing force and corresponding eccentricity for section. Take weight of concrete as 24 kN/m^3. 10

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14 A prestressed concrete beam (span = 3.6m) of rectangular section, 150 mm wide and 200 mm deep, is axially prestressed by a cable carrying an effective force of 100 kN. The beam supports a total U.D.L of 3 kN/m which includes self – weight of the beam. Compare the magnitude of principal tension developed in beam with and without axial prestress. Estimate the percentage reduction in principal tension in comparison with case of axial prestressing. What is the minimum vertical prestress required to eliminate this principal tensile stress? 10

15 A rectangular concrete beam of cross section 250 mm wide and 400 mm deep is simply supported over a span of 5 m and is prestressed by means of a symmetric parabolic cable with eccentricity of 150 mm at mid-span and zero at support sections. If the force in the cable is 600 kN and grade of concrete is M 40, calculate the deflection at mid-span when the beam is supporting its own weight and determine the concentrated load which must be applied at mid-span to restore it to the level of supports. The density of concrete is 24 kN/m^3. 10

16 The end block of a prestressed concrete beam is 250 mm wide and 450 mm deep. The beam is post-tensioned by two anchorages of 100 mm diameter with the center at 100mm from top and bottom of the beam. The force transmitted by each cable is 500 kN. As per IS 1343 code recommendations, estimate the maximum tension and bursting force. Also design an anchorage zone reinforcement using Fe-415 grade HYSD bars. 10

17 A two span continuous beam ABC (AB = BC = 12 m) is of rectangular section, 300 mm wide and 600 mm deep. The beam is prestressed by a parabolic cable, concentric at end supports and having an eccentricity of 200 mm towards the soffit of the beam at centre of span and 200 mm towards the top of beam at mid support B. The effective force in the cable is 400 kN. Determine resultant moment at B. Also locate the pressure line in the beam when in addition to its self weight, it supports an imposed load of 6kN/m. 10

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Code No: 11637/O/S

FACULTY OF ENGINEERING

BE 4/4 (Civil) I-Semester (OLD) Examination, May / June 2019

Subject : Geographical Information Systems (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A, & Any Five Questions from Part-B.

Part-A (25 Marks)

1. Draw a neat sketch depicting the families of projections used I GIS
2. Discuss in brief the application of GIS in land Use planning.
3. Describe with the help of examples, spatial and non spatial data used in GIS
4. Describe 'remotely sensed data' in brief
5. Briefly discuss record overly in GIS
6. What is the need for maintenance of non spatial data in GIS
7. What is map annotation and sketch various text patters and line styles used in GIS
8. Discuss in brief the various errors in GIS
9. Depict the electromagnetic spectrum using an neat sketch.
10. Define active remote sensing and passive remote sensing.

Part-B (50 Marks)

11. a) Discuss the various (both commercial and free) standard GIS packages in use
    b) Illustrate with the help of an example how GIS can be used for making decision under uncertainty.

12 a) What is a cartographic database and how is it useful to GIS
   b) Describe in detail about Digital Elevation Data.

13 a) Explain spatial analysis with the help of an example
   b) Describe Digital Elevation Model in detail.

14. a) Define and describe overlay operations, neighborhood operations and connectivity functions in GIS with the help of neat sketches.
    b) What are the types of errors in GIS and now can they be eliminated.

15 a) Describe the various products of remote sensing
   b) Describe visibility analysis with the help of an example.

16. a) Describe the various data compression techniques used.
    b) Compare and contrast point-line vector and raste polygon.

17. a) Describe the editing and query functions for non-spatial attribute data.
    b) Draw a flow chart depicting vrious types of sensors used in remote sensing.

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Code No: 11185/S

FACULTY OF ENGINEERING

BE 4/4 (EEE) I-Semester (Suppl.) Examination, May / June 2019

Subject : HVDC Transmission (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A, & Answer any five questions form Part-B.

Part- A (25 Marks)

1. Discuss the advantages of DC transmission. 2
2. Give the applications of DC transmission. 3
3. Deduce the equivalent circuit of an inverter. 3
4. Depict the delay angle and overlap angle with the help of neat waveforms. 2
5. List out the desired control features of a HVDC link. 3
6. Draw the combined characteristics of rectifier and inverter. 2
7. What is a Bypass valve? 2
8. What is meant by commutation failure? 3
9. Draw a typical parallel MTDC system. 2
10. State the applications of MTDC systems. 3

Part - B (50 Marks)

11. a) Explain the economic considerations in erecting a HVDC system. 5
    b) Draw the schematic diagram of typical HVDC converter station and explain its working. 5

12. Obtain the ratings of valves and transformers of a Graetz's circuit in HVDC transmission. 10

13. Explain different types of Harmonics introduced by HVDC converters and filters to eliminate the same. 10

14. a) Briefly explain the analysis of bridge converter with grid control. 5
    b) Discuss the relative merits of constant current control and constant Extinction angle control in HVDC transmission. 5

15. Explain the following control strategies for MTDC systems:
    a) Two ACR method.
    b) Current margin method. 10

16. a) Discuss the causes of over voltages and protection against them. 5
    b) Give the comparison between serial and parallel MTDC systems. 5

17. Write short notes on the following:
    a) Corona loss in AC and DC systems. 5
    b) Properties of converter circuits. 5

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Code No. 11187/S

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I – Semester (Supple.) Examination, May/June 2019

Subject: Power Quality (Elective – I)

Time: 3 Hours **Max. Marks: 75**

Answer all the questions from Part – A & any five question from Part – B.

Part – A (25 Marks)

1. Mention any two major reasons for the increased concern in Power quality.
2. How can Power quality problems be detected?
3. What are the sources of sags and interruption?
4. Define voltage sags due to motor starting?
5. What are the various causes of over voltages?
6. Define impulsive transients. Give example for impulsive transient over voltages.
7. What is total Harmonic distortion?
8. What is harmonic index? State it's significant.
9. What is proactive monitoring?
10. What are the purposes of power quality monitoring system?

Part – B (10 x 5 = 50 Marks)

11. a) Discuss the following characteristics of power quality events. [5]
    i) Short duration variants.
    ii) Long duration variants. [5]
    b) With a waveform sketch, explain the terms
    i) Voltage sag
    ii) Voltage interruption

12. a) Explain the various causes and effects of voltage sags. [5]
    b) Discuss in detail the sag evaluation in non radial systems. [5]

13. a) Discuss the effect of harmonics on the ASDs. [5]
    b) What is phase angle jump and how does it contribute to voltage sag. [5]

14. a) List the guidelines for limiting voltage harmonics. [5]
    b) illustrate the phenomena of impulsive transients and oscillatory transients. [5]

15. a) Discuss in detail about the selection of power quality monitoring sites. [5]
    b) What are the various instruments used for power quality measurements? Explain any two. [5]

16. a) What is a harmonic analyzer? Discuss in detail. [5]
    b) Draw and explain the functional structure of expert systems. [5]

17. a) Explain for the following: [5]
    i) Harmonic sources from industrial loads.
    ii) Explain Harmonic source identification Procedure for two source systems.
    b) Explain the phenomena of Ferro resonance. [5]

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Code No: 11186/S

FACULTY OF ENGINEERING

B.E 4/4 (EEE) I – Semester (Supple.) Examination, May/June 2019

Subject: High Voltage Engineering (Elective – I)

TIME: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & Any Five Questions from Part-B

PART – A (25 Marks)

1. Explain Photo – Excitation. 2
2. Discuss the process of Thermionic Emission. 3
3. If Voltage changes from V_{max} to V_{min} the charge delivered by capacitor is? 3
4. What are the disadvantages of single phase half wave rectifier circuit? 2
5. Explain Procedure for performing stability test. 3
6. Define the terms i) Impulse flash over voltage 2
   ii) Impulse puncture voltage.
7. What is Fogowshi Coil? 2
8. Why a single stage circuit inconvenient to obtain higher Impulse voltage? 3
9. Draw schematic diagram of a typical test plant. 2
10. Discuss power rating of test equipment. 3

PART – B (50 Marks)

11. Discuss the relation between Townsend's criterion for spark and Pascher;s criterion. 10

12. Explain clearly the basic principle of operation of an electrostatic generator. 10
    Describe with neat diagram the principle of operation, application and limitations of Van de Graf Generator. 10
13. A 12-Stage impulse generator has capacitors each rated at 0.3 , 150 KV. The capacitance of the test specimen is 400 pF. Determine the wave front and wave tail resistance to produce at 1.2/50 sec. impulse wave. Also determine the maximum output voltage if the changing voltage is 125 kV. 10
14. What are the requirements of a sphere gap for measurement of high voltages? Discuss the sphere gap for measurements. 10
15. Explain the function of discharge derive used in a power capacitor and explain test of efficiency of this device. 10
16. (a) Discuss various test voltages for AC and DC equipments. 5
    (b) Discuss test voltages required for different system voltages Ac system and DC system. 5
17. a) Discuss Corona discharges. 5
    b) Discuss breakdown in Solid Dialectic's. 5

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Code No: 11196/S

FACULTY OF ENGINEERING

B.E. 4/4 (Inst.) I-Semester (Suppl.) Examination, May / June 2019

Subject: Operating System Concepts (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer All Questions From Part – A, & any FIVE Questions From Part – B.

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Part- A (25 Marks)

1. List essential properties of operating system. 2
2. Write comparison between threads & processes 3
3. What are the functions & requirements of Memory management? 3
4. What is External fragmentation? How it can be overcome? 3
5. What are the necessary conditions for arising dead locks? 2
6. What are the different types of authentication needed in operating systems? 2
7. Define disk formatting and booting process. 3
8. What is swap space management? 2
9. Mention the list of communication protocols. 3
10. Mention the different categories of networks depending on their physical size. 2

Part - B (50 Marks)

11. Consider the following set of processes. Draw Gantt chart & Find the average turnaround time and waiting time by i) FCFS ii) Non Preemptive SJF iii) Round robin (quantum = 1 ms) algorithms.

Process	Arrival time	Burst time	Priority
P1	0	10	3
P2	1	1	1
P3	2	2	3
P4	3	1	2

12. Explain different types of inter process communication models with their advantages & limitations.

13. For the given memory partitions of 100K, 500K, 200K, 300K & 600K (in order) how would each of the first fit, best fit & worst fit algorithms place processes of 212K, 417K and 426K (in order)? Which algorithm makes the most efficient use of memory?

14. With necessary diagram explain segmentation with Paging.

15. Consider the following snapshot of the system :

	Allocation	Maximum	Available
	ABCD	ABCD	ABCD
P0	0012	0012	1520
P1	1000	1750	
P2	1354	2356	
P3	0632	0652	
P4	0014	0656	

By using bankers algorithm check whether the system is in safe state. Or not

16. Explain about design issues of computer network with differences between the types of networks with a real time example.

17. Write short notes on
    (a) Device drivers and interfaces.
    (b) Disk management.

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Code No: 11193/S

FACULTY OF ENGINEERING

BE 4/4 (Inst.) I-Semester (Suppl.) Examination, May / June 2019

Subject : Automation in Process Control (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A, & Answer any five questions form Part-B.

Part - A (25 Marks)

1.	What are different cable used for interfacing a PC to sensor	2
2.	What are the guidelines to be followed in selecting an Plug in cards?	3
3.	Mention the mode of working of SCADA system	2
4.	Draw 256 channel SCADA with single microprocessor	3
5.	Draw the block diagram of distributed control system	3
6.	What are different layers of computer network?	2
7.	Explain computer control of liquid level system	2
8.	Give the flow sheet of Plastic injection moulding process	2
9.	What are smart sensors Give the advantages of using it	3
10.	What is a HART protocol?	3

Part - B (50 Marks)

11	a)	Explain the concept involved in data acquisition system using PC add-on card	5
	b)	What are actuators? Classify them. How continuous actuator is used in process control?	5
12	a)	Draw the block diagram of RTU and explain the basic function carried out by the RTU	5
	b)	How modem is used in SCADA System with suitable diagram	5
13	a)	Explain about network protocols in DCS. Explain in detail	5
	b)	Write short notes on Main frame DDC with block diagram	5
14	a)	Explain On-line optimizing control of a Distillation Column with suitable diagram	5
	b)	Explain with suitable diagram computer control heat exchanger	5
15		Explain main features of field buses FIP and PROFIBUS in detail	10
16	a)	Discuss briefly VMS and VXI bus with suitable diagrams	5
	b)	Explain about temperature control of plastic injection moulding process	5
17	a)	Write short notes on P&ID Symbols. Mention the advantages.	5
	b)	Write short notes on LCU	5

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Code No. 11622 / O / S

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I – Semester (Old) Examination, May / June 2019

Subject: Optical Fiber Communication (Elective – I)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1	Define following terms with respect to optical laws a) Snell's law b) Critical angle	2
2	A light ray is incident from medium-1 to medium-2. If the refractive indices of medium-1 and medium-2 are 1.5 and 1.36 respectively. Then determine the angle of refraction for an angle of incidence of 30^o.	3
3	A filter has normalized frequency V = 26.6 and the operating wavelength is 1300 nm. If the radius of the fiber core is 25 « m. Compute the numerical aperture.	3
4	Explain the different types of rays in fiber optic.	2
5	Describe the construction and working of LED.	3
6	Explain the principle of laser action. Explain also the spontaneous and stimulated emission process.	2
7	Explain the working principle of APD.	3
8	In an optical receiver explain the sources of errors.	2
9	Explain link power budget.	3
10	Explain SONET/SDH network.	2

PART – B (5x10 = 50 Marks)

11	a) Explain general optical fiber communication system. b) Write short notes on multimode step index fiber.	5 5
12	Elaborate dispersion mechanism in optical fibers.	10
13	a) Compare the parameters of LED and LASER. b) Explain fiber splicing.	5 5
14	Explain the following term relative to PIN photodiode with proper expressions i) Cut-off wavelength ii) Quantum efficiency iii) Responsivity	10
15	Explain operational principle of WDM and what are the applications of WDM in LAN's?	10
16	Explain the principle of operation of a typical optical receiver.	10
17	a) Review the similarities and differences between SONET and SDH. b) Derive an expression for maximum acceptance angle of a fiber.	5 5

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Code No. 11623 / O / S

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I – Semester (Old) Examination, May / June 2019

Subject: Digital Image Processing (Elective – I)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1		What is meant by Digital Image Processing? Explain how digital images can be represented.	3
2		Define 2D DFT and its inverse.	2
3		Write about local enhancement	3
4		Explain degradation model with a neat diagram	2
5		Explain sharpening filters in frequency domain	3
6		Write short notes on region merging and splitting.	2
7		Define digital image compression. Explain about the redundancies in a digital image.	3
8		Write about inter-pixel redundant.	2
9		What is meant by morphological image processing?	3
10		Give some important applications of digital image processing.	2

PART – B (5x10 = 50 Marks)

11	a)	Explain about the restoration filters used when the image degradation is due to noise only.	6
	b)	Explain the least mean square filters for image restoration.	4
12	a)	Obtain the slant transform matrix for N=4.	6
	b)	State and prove any two properties of 2D Fourier transform.	4
13	a)	Define histogram of a digital image. Explain how histogram is useful in image enhancement.	6
	b)	Explain low pass filter and high pass filter in detail.	4
14	a)	Explain a model of the image degradation / restoration process.	6
	b)	Explain image compression model with neat diagram.	4
15	a)	Explain arithmetic encoding process with an example.	6
	b)	Explain about lossless predictive coding.	4
16	a)	Write about edge detection approaches.	4
	b)	Explain about speckle noise and its removal techniques.	6
17	a)	What is thresholding? Explain about global thresholding.	6
	b)	Write short notes on digital image water marking methods.	4

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Code No. 11201/N/S

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I-Semester (New) (Suppl.) Examination, May / June 2019

Subject: Optical Communication (Elective –I)

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions from Part - A and any five questions from Part - B.

Part - A (20 Marks)

1) Explain Total Internal Reflection? (2)

2) Define cutoff wavelength? (2)

3) A Silica optical fiber with a core diameter large enough to be considered by ray theory analysis has a core refractive index of 1.50 and a cladding refractive index of 1.47. Determine a) The critical angle at the core cladding interface? b) The numerical aperture for the fiber? (3)

4) Explain Rayleigh scattering Losses? (3)

5) Briefly explain Modal Dispersion? (3)

6) Define Group Delay? (2)

7) What are the advantages of LASER over LED? (3)

8) Define Avalanche multiplication noise? (2)

9) Define Link Margin? (2)

10) Write short notes on SONET/SDH network (3)

Part - B (20 Marks)

11. a) What are the advantages of optical fiber communication? (5)

OR

b) Describe with the aid of simple ray diagrams (5)
   a) The multimode step index fiber
   b) The single mode step index fiber, and compare advantages and disadvantages for the fibers?

12. a) Briefly explain material dispersion with suitable sketch? (5)

OR

b) Explain in detail the design optimization of single mode fibers. (5)

13. a) The radiative and non radiative recombination life times of minority carriers in the active region of a double hetero junction LED are 60 nsec and 90 nsec respectively. Determine the total carrier recombination life time and optical power generated internally if the peak emission wavelength is 870 nm and the drive current is 60 m (5)

OR

b) Explain the structure of surface emitting and Edge emitting LEDs (5)

14. Explain the structure of – (10)
   i) Fabry-Perot resonator.
   ii) DFB laser diode

15. Explain the following term relating to PIN photodiode with proper expressions. (10)
   i) Cut-off wavelength. ii) Quantum efficiency. iii) Responsivity.

…2

16. a) Draw & Explain the point to point fiber optical link block diagram and system considerations? (5)

OR

b) What are the applications of WDM in LAN's (5)

17. a) Explain link power budget and system rise time budget analysis? (5)

OR

b) A transmitter has an output power of 0.1 mW. It is used with a fiber having NA = 0.25, attenuation of 6 dB/km and length 0.5 km. The link contains two connectors of 2 dB average loss. The receiver has a minimum acceptable power (sensitivity) of – 35 dB m. The designer has allowed a 4 dB margin. Calculate the link power budget. (5)

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Code No. 11202/N/S

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I - Semester (New) (Suppl.) Examination, May/June 2019

Subject: Digital Image Processing (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part - A and any five questions from Part - B.

Part - A (25 Marks)

1. Specify the elements of DIP system. (3)
2. Find the number of bits required to store a 256X256 image with 32 gray levels. (2)
3. Define 2D fourier transform pair. (3)
4. What are the different transforms used in DIP? (2)
5. Write the steps involved in frequency domain filtering. (3)
6. What is image negative? (2)
7. What is bit plane decomposition? (2)
8. Differentiate lossless and lossy compression. (3)
9. What is polygon approximation method? (2)
10. Compare similarity and discontinuity based segmentation. (3)

Part - B (50 Marks)

11. (a) Explain about fundamental steps in digital image processing. (6)
    (b) Write about sampling and quantization. (4)

12. (a) Obtain Haar transform matrix for N=2. (6)
    (b) State and prove any two properties of 2D fourier transform. (4)

13. (a) Explain different point processing techniques. (6)
    (b) Write about histogram equalization. (4)

14. (a) Obtain the Huffman code for the word 'COMMITTEE'. (6)
    (b) Explain about types of redundancy. (4)

15. (a) Explain about region based segmentation techniques. (6)
    (b) Write a short note on watershed segmentation. (4)

16. (a) What is meant by digital image processing? What are the applications of it? How an image is represented? Explain. (6)
    (b) Explain about (4)
    (i) 4-connectivity
    (ii) 8-connectivity
    (iii) m-connectivity

17. (a) Perform histogram equalization of the image (6)

$$\begin{bmatrix} 4 & 4 & 4 & 4 \\ 4 & 5 & 4 & 3 \\ 5 & 5 & 5 & 3 \\ 4 & 5 & 4 & 3 \\ 4 & 4 & 4 & 4 \end{bmatrix}$$

    (b) What is homomorphic filtering? (4)

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Code No: 11205/N/S

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I-Semester (New) (Suppl.) Examination, May / June 2019

Subject : Artificial Neural Networks (Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and any five questions from Part-B.

Part - A (25 Marks)

1.	Differentiate between biological Neuron & on artificial Neuron	3
2.	Write any two learning laws for training the Neural Networks.	2
3.	What is an activation function & what is its significance	2
4.	What is recall in Neural Networks?	2
5.	Give the requirements of learning laws	3
6.	What is interpolative Neural Network memory	3
7.	Briefly explain pattern association task with an example	2
8.	Write a short notes on multilayer perception Neural Network	3
9.	State & briefly write about perception convergence theorem	3
10.	What is Boltzman machine?	2

Part- B (50 Marks)

11.	a)	Explain in detail Mc Culloch- Pitts Neuron model	5
	b)	Implement XOR logic gate with it	5
12		Explain in detail additive activation model	10
13	a)	Explain in detail pattern storage task with an example	5
	b)	Explain in detail pattern clustering task with an example	5
14		What is the perception Neural Network solution of XOR problem? Discuss in detail	10
15		Explain in detail Back Propagation Neural Network with its architecture, learning algorithm, features, limitations & extensions	10
16		Explain in detail auto associative feed forward & feed back Neural networks	10
17		Explain in detail Hopfield Neural Network with its copacity & energy function	10

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Code No: 11217/S

FACULTY OF ENGINEERING

B.E 4/4 (M/P) I-Semester (Suppl.) Examination, May / June 2019

Subject: Automobile Engineering (Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all the questions from Part-A and any five questions from Part-B.

Part - A (25 Marks)

1. Explain briefly the different parts of a 4-S engine.
2. What are the functions of cylinder liners? Compare the wet liners with dry liners.
3. What are the functions and parts of a spark plug?
4. What is the purpose of a radiator? Explain briefly.
5. What are the qualities of a good steering system? Explain.
6. State the functions of a differential unit used in automobiles.
7. Explain briefly the principle of a clutch.
8. What are the functions of a propeller shaft and universal coupling in an automobile?
9. State the Bharath and Euro Norms of air pollution.
10. What is the need of wheel alignment? Explain briefly.

Part - B (50 Marks)

11. Explain the schematic layout of chassis and its components. Discuss its salient features.

12. What are the requirements of a fuel injection system? Explain in detail.

13. Explain the different types of lubricating systems used in automobiles.

14. a) Describe the constructional features of a type with the help of a neat sketch.
    b) Write short notes on the rack and pinion steering mechanism of automobiles

15. a) Explain the disc brake system with the help of a neat sketch.
    b) Explain the working of a synchro-mesh gear box with the help of neat sketch.

16. a) How can we control the air pollution of automobiles? Explain
    b) Explain the different types of catalytic convertors.

17. a) Explain the functions and working of a flywheel.
    b) Give the details and explain about the Working of hybrid and electric vehicles.
    c) Explain the functions of a Turbocharger. What is supercharging?

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Code No. 11218/S

FACULTY OF ENGINEERING

B.E. 4/4 (Mech) I-Semester (Suppl.) Examination, May / June 2019

Subject : Non-Conventional Energy Sources (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

Part - A (25 Marks)

1. Write the concept of Non-Conventional energy sources
2. Explain about solar cell materials
3. Write the clarification of solar collectors
4. Write the applications of wind plants
5. What is wind energy
6. Define the term “Biomass Energy”
7. What is pyrolysis
8. What is meant by anaerobic digestion? What are the factors which affect bio digestion
9. Explain the difficulties is tides power development
10. Differentiate tidal and wave power

Part - B (5x10 = 50 Marks)

11 a) Compare renewable and non-renewable energy sources?
b) Explain how renewable energy sources suitable for rural applications

12 a) Explain working of feat plate collector with line diagram and brief about types in that
b) Briefly explain solar water heating and coding with sketch

13 a) Write an expression for available wind power
b) Explain how the speed and direction of wind in measured

14 a) Describe the working of a geothermal power plant
b) Explain the working and advantages of a biogas plant

15 a) Explain the various methods of tidal power generation
b) Discuss the features of Geothermal energy

16 a) Explain the factors which affect bio-digestion
b) Explain the terms i) suin declinations ii) The four angle iii) The latitude and longitude.

17 Write a short notes on the following
a) Solar Flat plate collector
b) Thermal gasification of bioman

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Code No: 11223/S

FACULTY OF ENGINEERING

B.E. 4/4 (M/P/AE) I-Semester (Suppl) Examination, May/June 2019

Subject: Composite Materials (Elective-I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer All Questions From Part – A, & any FIVE Questions From Part – B.

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(PART-A (25 MARKS)

1. How FRP composites are different from PMC,MMC,CMC (3)
2. List out the important applications of composite materials with its salient advantages. (3)
3. What is Gel time test for resins. (2)
4. How interlaminar shear test is important in case of fibre. (2)
5. What do you understand by Anisotropic, Heterogenous, Orthotropic,Transversely Isotropic materials. (3)
6. What is the fundamental concept of micromechanical approach. (2)
7. How laminar properties vary with orientation. (2)
8. How do you classify laminated composites. (2)
9. What do understand by Tsai-Hill criterion? (3)
10. What is Hrst Ply failure? (3)

PART-B (50 MARKS)

11. (a) Explain briefly the fibre aspect ratio and its significance.
    (b) Describe briefly various tests for measuring interfacial strength.

12. (a) Bring out the salient differences between Hand-Lay up and Prepreg Lay-up Processes of manufacturing.
    (b) How do you measure the basic composite properties-Explain briefly.

13. (a) Describe briefly the Pultrusion process of manufacturing.
    (b) Why does the transverse stresses arise when a fibrous composite consisting Of components with different elastic moduli is uniaxially loaded.

14. (a) Explain briefly load transfer from matrix to fibre when the fibre is elastic and Matrix is plastic.
    (b) Briefly explain the elastic constants of a lamina.

15. (a) Describe the fracture modes in composites with a particular reference Debonding, Fibre pull out and Delamination fracture.
    (b) Explain the mechanism of load transfer from matrix to lamina.

16. (a) Why thermal transport properties of carbon/carbon composites play an important Role in the processing of carbon fibre reinforced composites.
    (b) Explain Tsai-Nu laminate strength.

17. Write short notes on the following:
    (a) Filament winding.
    (b) Processing of CMCs.
    (c) Fibre packing geometry.

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Code No. 11233/S

FACULTY OF ENGINEERING

B.E. 4/4 (AE) I - Semester (Suppl.) Examination, May/June 2019

Subject : Vehicle Dynamics (Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and any five questions from Part-B.

PART – A (25 Marks)

1 Define natural frequency? Why is it important to determine the natural frequency of vibrating system?
2 What do you mean by degrees of freedom? Give example for zero, single, two and multi-degrees of freedom systems.
3 Explain different types of damping with a sketch.
4 What is magnification factor and transmissibility?
5 What is vibration isolation? Explain the vibration isolation materials.
6 Explain the 'Seismic' instrument and how it will be used to measure displacement and acceleration.
7 What do you understand by 'critical speed' of shafts? Why does it occur?
8 How is the disc designed to improve brake cooling?
9 Explain the causes of vibration and effects of vibration
10 Write an engineering brief on the whirling of rotating shafts.

PART - B (50 Marks)

11 In a single-degree damped vibrating system, a suspended mass of 10 kg makes 25 oscillations in 20 seconds. The amplitude decreases to 0.35 of the initial value after 6 oscillations. Determine (i) the stiffness of the spring, (ii) the logarithmic decrement, (iii) the damping factor, (iv) the damping coefficient.

12 A refrigerator unit weighing 30 kgf is to be supported by three springs of stiffness 'k' each. If the unit operates at 580 rev/min, what should be the value of spring constant 'k' if only 10% of the shaking force of the unit is to be transmitted to the supporting structure?

13 Calculate the whirling speed of a shaft of 20mm diameter and 0.7m long carrying a mass of 1 kg at its mid-point. The density of the shaft material is 40mg/m^3 and young's modulus is 200 GN/m^2. Assume the shaft to be freely supported.

14 (a) What is a tyre ply?
(b) Why is a radial –ply tyre more comfortable at speed than cross-ply tyre?

15 Write an engineering brief on the whirling of rotating shafts, describing the phenomenon and indicating its importance in the design of machinery.

16 Explain with a neat sketch working principle of the accelerometer. Discuss the effects of amplitude distortion in such an instrument.

17 (a) Explain Holzer's method of analyzing multi-degree freedom systems.
(b) What is static and dynamic balance of a wheel?

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Code No. 11237/S

FACULTY OF ENGINEERING

B.E. 4/4 (A.E.) I - Semester (Suppl.) Examination, May / June 2019

Subject : Production and Operations Management (Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1 What are the factors affecting plant location ?
2 Write any two limitations of break analysis ?
3 What are various fore casting objectives ?
4 What is moving average ? And weighted moving average ?
5 Briefly write on Mean Absolute Percentage Error (MAPE) ?
6 Define aggregate planning and master production schedule ?
7 What is the importance of inventory control ?
8 List out the assumptions in economic order quality ?
9 What are the rules for network construction ?
10 What are EOT and LOT ?

PART – B (50 Marks)

11 (a) Differentiate Job shop type, Batch type and Mass production ?
(b) Explain combination layout with a neat sketch ?

12 (a) Explain break-even chart with a neat sketch.
(b) ABC company plans to sell an article at a local market. The articles are purchased at Rs.5 on the condition that all unsold articles shall be returned. The rent for the space is Rs.2000. The articles will be sold at Rs.9. Determine the number of articles which must be sold.
(c) To break-even.
(d) To earn Rs. 400 as profit.
(e) Margin of safety.

13 (a) Briefly explain the procedure for method study. What is performance rating ?
(b) Explain the characteristics of good wage systems ?

14 (a) Explain the least-square method of forecasting ?
(b) Discuss forecast errors (i.e.- MAD, MSE, MFE) ?

15 (a) Distinguish between aggregate planning and master production schedule.
(b) Discuss the material requirement planning (MRP) objectives.

16 (a) What are inventories ? Why does it is essential to keep inventories ?
(b) A manufacturer has to supply his customers Rs.3600 units of his product per year. Shortages are not permitted. Inventory carrying cost amount Rs.1.20 per unit per annum. The setup cost per unit is Rs.80. Find.
i) Economic order quality.
ii) Optimum number of orders per annum.
iii) Minimum annual inventory cost.

Contd…..2

17 (a) Write the differences between PERT and CPM

(b) A project consists of 12 activities and their time estimates are shown below.

Activity	Time (in weeks)		
	t_o	t_m	T_p
1-2	4	6	10
1-3	3	7	12
1-4	5	6	9
1-7	2	4	6
2-4	6	10	20
2-6	3	4	7
2-7	5	9	15
3-4	3	7	12
4-5	2	4	5
5-6	1	3	6
3-7	2	5	8
6-7	1	2	6

a) Draw the network diagram.

b) Determine the critical path.

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Code No. 11244/S

FACULTY OF ENGINEERING

B.E. 4/4 (CSE) I Semester (Supplementary) Examination, May / June 2019

Subject: Image Processing (Elective – I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part – A & any five questions from Part – B

Part – A(25 Marks)

1. Define Image processing and Digital image processing. 3
2. Differentiate image sampling and quantization. 2
3. Show that Fourier transform of the unit impulse located at t = t_0 is $\cos(2\pi t_o - j\sin 2\pi t_o)$ 3
4. Write the Discrete Fourier Transform pair. 2
5. Differentiate histogram and normalized histogram. 3
6. How can histogram be used in finding the threshold to segment and image. 2
7. What is image redundancy? 2
8. How the quality of the compressed image can be measured? 3
9. Draw the model diagram of the image degradation/ restoration process 3
10. How you can convert color in RGB model into MSI model 2

Part – B

11. a) Explain the image formation in eye. 6
    b) How digital images are represented in a computer memory 4
12. a) Show that Fourier transform of the periodic impulse train is 5

$$\frac{1}{\Delta T}\sum_{n=-\infty}^{\infty}\delta\left(\mu - \frac{n}{\Delta T}\right)$$

    b) Explain Image smoothing using frequency domain filters. 5
13. a) Explain region growing method for segmenting an image 5
    b) Suppose that an image has the intensity PDF Pr(r) = 2r / $(L-1)^2$ for 0 r L-1 and Pr (r) = 0 for other values of r. Find the transformation function that will produce an image whose intensity PDF is $P_z(Z) = 3z^2/(L-1)^3$ for 0 Z L-1 and $P_z(Z) = 0$ for other values of Z. 5
14. a) Describe the image compression by LZW coding. 6
    b) Discuss about different image formats and compression standards. 4
15. a) Explain the different models of noises arise during the image acquisition and estimation of noise parameters. 7
    b) How intensity slicing is used in color image processing? 3
16. a) Explain the different linear and nonlinear smoothing spatial filters? 7
    b) State the Sampling theorem. 3
17. Write short notes on any two of the following
    a) Histogram equalization 5
    b) Arithmetic Coding 5
    c) Least Square filtering 5

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Code No: 11242/ S

FACULTY OF ENGINEERING

BE 4/4 (CSE) I – Semester (Supple.) Examination, May/June 2019

Subject: Software Project Management (Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note : Answer All Questions from Part-A , & Any five Questions From Part –B

PART – A (25Marks)

1. What do you mean by project management? What is its need? Give any one formal definitions of project management. (3)
2. List any three necessary improvements that can make waterfall model work in modern software development? (3)
3. What do you mean by "Round Trip Engineering". (2)
4. What is Iterative Process Planning. (2)
5. List the various types of contracts and describe the various stages in awarding a contract. (3)
6. What is leadership and how can you measure leadership styles? (2)
7. What is a project? How is it different from task? (3)
8. What do you mean by team development? (2)
9. What is programme management? (3)
10. List the basic parameters of cost estimation model. (2)

PART – B (50 Marks)

11. (a) What are the top five principles of modern software management and how are the improvements compared to waterfall model? Explain the predominant cost estimation model with the help of a diagram. (5)
    b) List and briefly explain the seven top-level workflows of a process. Name any two artifacts related to each workflow. (5)

12. (a) What are engineering and production phases of modern process? Explain the differences in emphasis regarding life-cycle aspects (risks, products, activities, assessment, economics and management) between the two stages. (5)
    (b) Explain how the size of the teams affect some of the key process primitives like life cycle phases, artifacts, workflow effort allocation, checkpoints, management discipline and automation discipline. (5)

13. Discuss the seven top workflows of the software process. (10)

14. (a) What are the five basic stages of team development? How can one become a good team member? (5)
    (b) What is organizational behavior? In what way does this theory help in project management? Give an example. (5)

15. What are the different models of motivation that have been proposed to motivate team members to work effectively? (10)

16. (a) Describe briefly the project level organization structure with a diagram. (5)
    (b) Give the line-of-business organization structure with the help of a diagram. (5)

17. Write short notes:
    a) CMM (5)
    b) ISO 12207 (5)

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Code No: 11247/S

FACULTY OF ENGINEERING

BE 4/4 (CSE) I – Semester (Supplementary)Examination, May/ June 2019

Subject: Mobile Computing (Elective – I)

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part – A, & any five questions from Part – B.

Part – A (25 marks)

1. What are the disadvantages of cellular system? [2]
2. Explain the role of SIM, HLR, and VLR in GSM network? [3]
3. Distinguish between FDMA and TDMA? [3]
4. Define handover in GSM ? [3]
5. Differentiate Infrastructure Vs ad hoc networks? [2]
6. List out advantages of Snooping TCP? [3]
7. List the applications of MANETs? [2]
8. Write the advantages and disadvantages of Indirect-TCP?? [3]
9. Explain use of TCP over 2.5/3G wireless networks? [2]
10. What is WAE? [2]

PART – B (5 x 10 = 50)

11. a) Compare the features of SDMA, FDMA, TDMA, and CDMA with their advantages and disadvantages. [5]
    b) Explain in detail hidden and exposed terminals. [5]

12. a) What are the subsystems in used in GSM network architecture? Explain the functionality of each unit with GSM architecture. [6]
    b) What are the functions of authentication and encryption in GSM? [4]

13. a)What is the role of handover mechanism in satellite communications? [5]
    b) Explain about digital audio broadcasting ? [5]

14. a)Discuss in detail about Dynamic Host Configuration Protocol? [5]
    b) Explain mechanism for IP packet delivery using mobile IP concept? [5]

15. a)Describe MANET. How does a MANET differ from a fixed infrastructure Network. [5]
    b) Define care of address (COA) and what are the two different possibilities for the location of COA? [5]

16. a)Explain the concept behind the traditional TCP. What are the improvements that are made into the classical TCP? [5]
    b) Why do we go for ITCP? What the advantages and disadvantages of it? [5]

17. a)Draw and discuss the protocol architecture of WAP.? [5]
    b) Write short notes on Windows CE? [5]

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Code No. 11256/S

FACULTY OF ENGINEERING

B.E. (I.T.) 4/4 I - Semester (Suppl.) Examination, May / June 2019

Subject : Digital Image Processing (Elective – III)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1	Differentiate between spatial and gray-level resolution.	(3)
2	Give linear and non-linear operators of Digital Image Processing.	(2)
3	What is Image sharpening with respect to spatial and frequency Domain.	(2)
4	What is Gaussian Highpass filter?	(3)
5	List noise models.	(3)
6	Define erosion and dilation.	(2)
7	Define patterns and pattern classes.	(2)
8	How an edge of an image is detected using Image segmentation methods?	(3)
9	What is pseudo color image processing?	(2)
10	What is predictive coding?	(3)

PART – B (50 Marks)

11	(a) Explain the fundamental steps in Digital Image Processing with neat block diagram.	(6)
	(b) Write about some basic relationships between pixels.	(4)
12	Explain sharpening filters in both spatial and frequency domain.	(10)
13	Explain restoration of an image using spatial filters in the presence of noise in detail.	(10)
14	(a) Explain segmentation using watershed algorithm in detail.	(5)
	(b) Explain how to calculate correlation of an image.	(5)
15	(a) Explain color Image processing fundamentals in detail.	(5)
	(b) Explain lossy compression methods in detail.	(5)
16	(a) Explain Histogram processing in detail.	(5)
	(b) Explain image smoothing in spatial domain in detail.	(5)
17	Write short notes on any **two** of the following:	
	(a) Explain opening and closing of an image	(5)
	(b) Explain thresholding using image segmentation in detail	(5)
	(c) Explain Huffman Encoding method of an image in detail	(5)

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Code No. 11259/S

FACULTY OF ENGINEERING

B.E. (I.T.) 4/4 I - Semester (Suppl.) Examination, May / June 2019

Subject : Software Reuse Techniques (Elective – III)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1	List the basic principles to achieve Systematic Software reuse.	(3)
2	Define object oriented software engineering?	(2)
3	What is the intent of Singleton pattern?	(2)
4	Write the consequences of Abstract Factory pattern.	(3)
5	Differentiate Structural and Behavioral patterns.	(3)
6	Draw the Structure of Façade Pattern.	(2)
7	Write the intent and context of layer pattern.	(3)
8	What are the benefits of Mediator pattern?	(2)
9	Who are the most important actors within the reuse business?	(2)
10	Describe about business use cases.	(3)

PART – B (50 Marks)

11 Explain in detail how facades control access to component system internals. (10)

12 (a) Describe reusable design and implementation components (5)
(b) Explain the intent,structure and participants of builder pattern? (5)

13 (a) How can we use Design pattern? Give a simple approach to applying a design pattern Effectively. (5)
(b) Describe the intent, structure and participants of Factory pattern with the help of an example. (5)

14 Write short notes on:
(a) Composite pattern (5)
(b) Interpreter pattern (5)

15 Write the intent, motivation, structure and known uses of the following patterns
(a) Decorator pattern (5)
(b) Visitor Pattern (5)

16 Explain the intent, motivation, applicability, collaborations and consequences of Strategy pattern. (10)

17 Explain the process of testing reusable components and frameworks. (10)

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Code No: 11257/S

FACULTY OF ENGINEERING

B.E. 4/4 (I.T) I-Semester (Suppl.) Examination, May / June 2019

Subject : Grid Computing (Elective-III)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all the questions from Part-A and any five questions from Part-B.

Part-A (25 Marks)

1.	What is the core idea behind Grid computing?	2
2.	List the universes in Condor version-7	3
3.	Write static and dynamic characteristics of a machine useful for grid computing.	3
4.	Define data confidentiality, Data integrity specific to grid computing	2
5.	What is the basic idea behind SOA (Service Oriented Architecture)?	2
6.	List three fundamental properties of a web service	3
7.	What is the use of marshalling and unmarshalling	2
8.	What is grid Enabling?	2
9.	Discuss the idea behind parameter sweep	3
10.	Write about MPI-Send () function	3

PART- B (50 Marks)

11.	a)	Describe the key aspects of Grid computing software interface	5
	b)	Explain the file staging with a neat diagram	5
12		Explain the internal steps to execute a job in Condor with a neat diagram	10
13	a)	Explain the data placement Feature of Scheduler with a neat diagram	5
	b)	Explain the Fault tolerance Feature of scheduler with a neat diagram	5
14	a)	Discuss about the GSI communication protocols	5
	b)	Discuss the components of Public Key Infrastructure	5
15	a)	Explain the steps to access a Web service in a SOA.	5
	b)	Explain the steps to access a web service from Web service container	5
16	a)	Discuss the features of Workflow Editors	5
	b)	Explain about issues in using multiple Grids	5
17		Write short notes on the following	
	a)	Security mechanism using of lite	5
	b)	Globus Tool kit	5

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Code No. 11260/S

FACULTY OF ENGINEERING

B.E. 4/4 (IT) I-Semester (Suppl) Examination, May / June 2019

Subject : Semantic Web (Elective-III)

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1	What is an ontology?	2
2	Define Description logic.	2
3	Specify RDF graph notation.	3
4	List out the Rule ML tags to represent the knowledge.	3
5	State the 3 expressive sublanguages of OWL.	3
6	Define a web service.	2
7	Show UDDI registry	3
8	What is a Word Net?	2
9	Write what is not a semantic web.	2
10	Define Vcard, PICS and FOAF.	3

PART – B (50 Marks)

11	a)	Explain the semantic web architecture in detail.	7
	b)	Give the differences between taxonomies and ontologies.	3
12	a)	Illustrate RDF statements with the help of RDF / XML document.	
	b)	List out the notations, constructions and reasoning techniques supported by description logic.	4
13		Specify the requirements of web ontology description language.	10
14		Explain Lexicon-Based ontology development method.	10
15		Discuss about various agent forms along with diagram which shows the attributes of agent.	10
16	a)	Write an example and illustrate how classes will be used in OWL.	6
	b)	List out the web service security standards.	4
17		Write short notes on :	
	a)	Uschold and king ontology development method	4
	b)	Metadata standards	6

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