Sl.No. 24903 **Sub. Code:34115102/34116102**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY – 2019
First semester
COMMON TO ALL BRANCHES
ENGLISH FOR ENGINEERS
(Candidates admitted under 2015 & 2016 Regulations)

Time: Three hours Maximum: 100 marks

Answer **ALL** questions

PART – A (10 x 2 = 20 Marks)

1. Identify the parts of speech for the underlined words.

i) I really liked the book that <u>you</u> gave me.

ii) Sam drives an <u>expensive</u> Old Italian car.

2. Correct the following sentences by identifying the errors.

i) He was chose as the leader of the group.
ii) I have got my M.Sc., degree in 1998.

3. Fill in the blanks with suitable articles.

iii) I bought ------ pair of shoes.

iv) I read ----- amazing story last night.

4. Identify the silent letters for the given words.

i) Half ii) Castle

5. Choose the correct homonyms for the following.

i) Congradulations! I heard you won a gold -------in the swimming competition.
ii) What kind of fish would you like – salmon or ____? Soul, sole

6. SIMPLE PRESENT TENSE

v) The train _____ (leave) every morning at 8 A.M.
vi) A magnet _____ (attract) iron fillings.

7. PAST PERFECT CONTINUOUS

i) Mike wanted to sit down because he _____ (stand) all day at work.
ii) Jason was tired because he _____(jog)

8. Complete the following sentence:

i)If the weather is rough, _____

ii) If I had the time, _____

9. Identify the sentence pattern for the following sentences

i) I congratulated her on her success

ii) Issac Newton discovered the gravitational force of earth.

10. Write sentences of your own for the following sentence patterns.

i) SVC ii) SVOA.

PART – B (5 x 16 = 80 Marks)

11.a) Write a telephonic conversation between an employer and his employee, who seeks permission for a day leave.

OR

b) Define diphthongs and explain with examples.

12. a) Describe a memorable incident in your life

OR

b) What are the points to remember while making a call and receiving a call.

13. a) As a Project leader in a software company you are asked to prepare a report on the on going project and send it to the company head quarters. Prepare a report on the project.

OR

b) Write a report of an accident you have witnessed to the daily news paper.

14. a) Explain in detail about Scanning.

OR

b) Define and describe about the washing machine.

15. **Read the passage and draw a flow chart.**

a) The earth contains a large number of metals which are useful to man. One of the most important of these is iron. The iron wore which we find in the earth is not pure. It contains some impurities which we must find in the earth is not pure. It contains some impurities which we must remove by smelting. The process of smelting consists of heating the ore in a blast furnace with coke limestone and reducing it to metal. Blasts of hot air enter the furnace from the bottom and provide the oxygen which is necessary for the reduction of the ore. The ore becomes molten, and its oxides combine with the limestone to form a liquid slag. This floats on top of the molten iron, and passes out of the furnace through a tap. The metal which remains is pig iron.

We can melt this down again in another furnace-a cupola-with more coke and limestone, and tap it out into a ladle or directly into moulds.

OR

b) Write a letter to your friend inviting him for your birthday celebration.

Sl.No. 24934 SUBJECT CODE: 34115103/34116103

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO ALL BRANCHES

FIRST SEMESTER

PHYSICS FOR ENGINEERS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What are elastic bodies?

2 What is I-shaped girder?

3 Define: no. of atoms per unit cell.

4 Give the atomic radius and packing factor for SC

5 Define: Stimulated absorption

6 What is population inversion?

7 Draw the structure of optical fibre.

8 What is Numerical aperture.

9 What is a developer? Give example.

10 What are the difference between X-ray radiography and X-ray fluoroscopy?

PART-B (5 x 16 = 80)

11 a. Describe about the three types of elastic moduli.

OR

b. Describe about the experimental determination of rigidity modulus.

12 a. Explain in detail about seven crystal systems with neat diagram.

OR

b. Write a note on the following i) Point defect, ii) line defect.

13 a. Describe the construction and working of CO_2 laser with necessary diagram.

OR

b. Explain the following terms
i. population inversion ii. pumping process iii. laser action

14 a. Describe briefly the optical fibre communication system.

OR

b. Write down the classification of fibers on the basis of (i) material (ii) number of modes (iii) refractive index.

15 a. Explain the working of ultrasonic flaw detector with neat diagram.

OR

b. Explain different ultrasonic scanning techniques.

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Sl.No. 29975 SUBJECT CODE: 35015101/35016101

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
COMMON TO CSE,BME,CIVIL,EEE,ECE,MECH AND MECT
FIRST SEMESTER
ESSENTIALS OF COMPUTER SCIENCE AND ENGINEERING

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is mean by hardware?

2 Write any four applications of Computer.

3 How you can add page number in MS Word?

4 List out the major features of Power Point.

5 Define flowchart.

6 What is mean by looping?

7 What is top down approach of software development?

8 How to implement in an algorithm in an efficient way?

9 Mention any four HTML Tags.

10 What are the Hyperlink, Anchors and Link in the HTML?

PART-B (5 x 16 = 80)

11 a. Describe the various types of Computers.

OR

b. Describe the services provided by Internet.

12 a. Briefly explain table menu in MS Word.

OR

b. Explain Tools menu in MS Word

13 a. What is flowchart? Explain the symbols used in drawing the flowchart. Also write the rules and advantages of using flowcharts.

OR

b. Write an algorithm and flowchart to find the given number is odd or even.

14 a. Explain in detail about problem solving strategies with example.

OR

b. Discuss in detail about analysis of algorithm.

15 a. To create a web page to showing an ordered & unordered list of name of your five friends.

OR

b. Explain in detail about HTML image tags.

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Sl.No. 24413 SUBJECT CODE: 34115401/34116401

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
(COMMON TO AERO, AUTO, CIVIL,EEE, MECH,MECTAND SOLAR)
FOURTH SEMESTER
NUMERICAL METHODS

(Candidates admitted under 2015& 2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Which has faster convergence either Gauss-Seidel or *Gauss–Jacobi method* ?

2 State any two differences between direct and iterative methods for solving system of equations?

3 What is the error involved in *Newton's* Interpolation formula.

4 State Inverse Lagrange's Interpolation Formula.

5 Write the formula to compute $\frac{dy}{dx}$ at $x = x_0 + ph$ for a given data (x_i, y_i), $i = 0, 1, \ldots, n$

6 State two point *Gaussian quadrature formula* .

7 State Taylor series algorithm for the first order differential equation

8 Using *Euler's method* to solve $y' = x + y + xy$, $y(0) = 1$, $h = 0.05$ and Compute $y(0.05)$

9 State *Bender-Schmidt scheme* to solve $\frac{\partial^2 u}{\partial x^2} = \frac{1}{\alpha^2}\frac{\partial u}{\partial t}$

10 Define boundary value problem.

PART-B (5 x 16 = 80)

11 a. Evaluate $\sqrt{12}$ to four decimal places by *Newton - Raphson* method

OR

b. Solve the given system by *Gauss –Jacobi* method.

$$8x - 3y + 2z = 20$$

$$4x + 11y - z = 33$$

$$6x + 3y + 12z = 35$$

p.t.o

12 a. Using *Newton's Forward Interpolation Formula,* Find the value of $\text{Sin}\,47^\circ$ given that

$\text{Sin}\,45^\circ = 0.7071,\ \text{Sin}\,50^\circ = 0.7660,\ \text{Sin}\,55^\circ = 0.8192,$ and $\text{Sin}\,60^\circ = 0.8660.$

OR

b. Using *Newton's divided difference formula*, Find the value of $f(8)$ from the following table.

x	4	5	7	10	11	13
y	48	100	294	900	1210	2028

13 a. Find the first two derivatives of y at $x = 54$ from the following data.

x	50	51	52	53	54
y	3.6840	3.7084	3.7325	3.7563	3.7798

OR

b. Evaluate $I = \int_0^1 \frac{dt}{1+t}$ by *Gaussian* two point and three point formula. Find a boundary for the error in three point formula and compare it with true error

14 a. Using the *Runge-Kutta method*, tabulate the solution of the system $\frac{dy}{dx} = x + z,\ \frac{dz}{dx} = x - y,\ y(0) = 0,\ z(0) = 1,\ h = 0.1.$ Find $y(0.1),\ y(0.2),\ z(0.1)$ and $z(0.2)$.

OR

b. Solve $\frac{d^2y}{dx^2} - x\left(\frac{dy}{dx}\right)^2 + y^2 = 0$ using *Runge-Kutta method* for $x = 0.2$ correct to 4 decimal places. Initial conditions are $x = 0,\ y = 1,$ and $y' = 0.$

15 a. Solve $xy'' + y = 0,\ y'(1) = 0$ and $y(2) = 1$ with $h = 0.5$

OR

b. Solve $u_{xx} + u_{yy} = 0$ in $0 \le x \le 4,\quad 0 \le y \le 4$ given that $u(0, y) = 0,\ u(4, y) = 8 + 2y;\ u(x, 0) = \frac{x^2}{2}$ and $u(x, 4) = x^2$ taking $h = k = 1$ obtain the result correct to one decimal.

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Sl.No. 24413

Sl.No. 24745 SUBJECT CODE: 34615402/34616401

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FOURTH SEMESTER
TRANMISSION & DISTRIBUTION

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Why is electrical power preferable to be transmitted at high voltages?

2 Explain the difference between transmission and distribution.

3 What do you mean by the constants of an Overhead transmission line?

4 Calculate the capacitance per km of a pair of a parallel wire 2 cm in dia, spaced uniformly 3m apart in air.

5 Explain the difference between nominal T and nominal π method.

6 Define propagation constant.

7 What are the methods to improve string efficiency?

8 Name any four insulating materials used for making U.G. cable .

9 Define Resistance grounding.

10 State the advantages of the ring distributor over radial system.

PART-B (5 x 16 = 80)

11 a. A 50Km long transmission line supplies a load of 5 MVA at 0.8pf lagging at 33 kV. The efficiency of transmission is 90%. Calculate the volume of A1 conductor required for the line when
i)single phase 2- wire system is used
ii) 3-pahse, 3-wire system is used. The specific resistance of A1 is 2.85 x 10-8 Ω-m.

OR

b. Compare EHVAC and HVDC transmission considering both economic and technical aspects.

12 a. Drive an expression for the capacitance for a 3 phase overhead transmission line when the conductors are,
i)Symmetrically placed.
ii) Un symmetrically placed but transposed.

OR

b. A 3 phase, 50Hz, 132kV overhead line has conductors placed in a horizontal plane 4m apart. Conductor diameter is 2cm. If the line length is 100km, calculate the charging current per phase assuming complete transposition.

13 a. Derive an expression for sending end voltage and current for long transmission line using rigorous solution and evaluate the ABCD parameters.

OR

P.T.O

b. Write the phenomenon of corona. Derive critical disruptive voltage and visual critical voltage. Write the Peek's formula used for calculating corona loss under fair weather conditions and also under storm conditions

14 a. Explain in detail the different methods of grading.

OR

b. Describe with a neat sketch, the construction of a 3 core belted type cable. Discuss the limitations of such a cable.

15 a. Describe the following substations bus schemes with suitable diagram. State their advantages and disadvantages.
a. Double bus with double breaker.
b. Double bus with single breaker.

OR

b. A single phase ring distributor ABC is fed at A. The loads at B and C are 40A, 0.8 pf lagging and 60 at 0.6 pf lagging respectively. Both power factors expressed are referred to the voltage at point A. The total impedance of sections AB, BC, CA are (2+j3),(3+4j)and (1+j3) respectively. Determine current in each section.

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Sl.No. 24468 SUBJECT CODE: 34615403

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FOURTH SEMESTER
ELECTRICAL MACHINES – II

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 List out the different types of Alternators.

2 State the condition required for paralleling two synchronous generators.

3 State the formula to find synchronous speed (Ns).

4 Define starting torque.

5 List out the advantages and disadvantages of induction motor.

6 Define torque of a three phase induction motor.

7 Mention the types of starters used in three phase induction motor.

8 Write down the application of DOL starter.

9 List out the types of single phase induction motor.

10 Enumerate the importance of shading band.

PART-B (5 x 16 = 80)

11 a. How to determine the regulation of synchronous generator in ZPF and ASA Methods?

OR

b. The open and short circuit test readings for a 3-phase, star connected, 1000-KVA, 2000V, 50-Hz synchronous generators are:

Field Amps:	10	20	25	30	40	50
O.C Terminal Volts	800	1500	1760	2000	2350	2600
S.C. armature current in Amps	----	200	250	300	----	----

The armature effective resistance is 0.2 ohm per phase. Draw the characteristic curves and estimate the full-load percentage regulation at (i) 0.8 p.f lagging (ii) 0.8 p.f leading.

12 a. Does the change in excitation affect the p.f of the synchronous motor?

OR

p.t.o

b. (i)A 2.5 kv ,3 phase ,star connected motor has a synchronous reactance of 5 ohm/phase and the motor input is 1000 kw at rated voltage and an excitation emf of 3600 v (line voltage).Calculate the line current and power factor. (ii) Derive the equation of a torque in an synchronous motor with its essential diagrams.

13 a. A 440 V, 3ϕ, 50 Hz, 4 poles. Y connected induction motor has a full load speed of 1425 rpm. The rotor has an impedance (0.4 + j4) ohm and rotor /stator turn ratio of 0.8. Calculate (i) Full load torque (ii) rotor current and full load rotor cu loss (iii) power output if windage and friction loss amount to 500 W (iv) maximum torque and speed at which it occurs (v) starting current and (vi) starting torque

OR

b. What is equivalent circuit? Determine the constants of equivalent circuit by the suitable test of a 3-phase induction motor

14 a. Elucidate the working principle of a rotor resistance starter with neat diagram.

OR

b. Write the short notes on (i) stator resistance starter (ii) Necessity of starter and speed control.

15 a. Discuss the principle operation of stepper motor with neat sketches and merits and demerits

OR

b. Explain briefly about the construction and principle operation of reluctance motor with neat diagram.

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Sl.No. 24468

Sl.No. 1747 SUBJECT CODE: 34615404/34616403

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E-DEGREE EXAMINATIONS- NOV/DEC - 2018
ELECTRICAL AND ELECTRONICS ENGINEERING
FOURTH SEMESTER
ELECTRO MAGNETIC THEORY

(Candidates admitted under 2015& 2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Name few applications of Gauss law in electrostatics.

2 A parallel plate air core capacitor is flowing with 10 V across the plates. If the separation between the plates is now increased to double the original value, Calculate the new value of the voltage across the capacitor.

3 Write a note on magnetic scalar potential

4 A solenoid with a radius of 2cm is wound with 20 turns per cm length and carries 10 mA. Find H at the center if the total length is 10 cm

5 Define lenz's law.

6 Compare the energy stored in inductor and capacitor.

7 Describe a wave.

8 In a time varying situation how do you define a good conductor .

9 Compare FDM and FEM methods.

10 State conformal transformation method.

PART-B (5 x 16 = 80)

11 a. State and explain the boundary conditions of electric field at dielectric and conductor.

OR

b. What is dipole? Derive the expressions for potential and electric field intensity due to a dipole.

12 a. Derive an expression for magnetic field intensity at any point on the axis of solenoid

OR

b. Obtain the expression for torque in terms of magnetic moment

13 a. A solenoid consisting of 1000 turns of wire wound on a former of length 100 cm and diameter 3 cm is placed co-axially within another solenoid of the same length and number of turns but with a diameter of 6 cm. find the mutual inductance and the coupling co-efficient of the arrangement

OR

b. Derive Maxwell equations from faraday's law

14 a. A free space conductor interface has H_i=1 A/m on the free space side. The frequency is 31.8 MHz and the conductor constants are $\varepsilon_r = \mu_r = 1$ and σ=1.26 MS/m. Determine H_r and H_t and depth of penetration of H_i

OR

b. Derive uniform plane wave and derivative equation for uniform plane wave.

15 a. Derive the general solution of Laplace equation in 3 dimensions by separation of variables.

OR

b. Explain boundary value problems in Cartesian coordinates and spherical coordinates

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Sl.No. 24688 SUBJECT CODE: 34615405/34616404

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FOURTH SEMESTER
MEASUREMENT AND INSTRUMENTATION

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is Threshold.

2 How are the errors classified?

3 Mention any two precautions to be taken while using an Ammeter.

4 Enumerate the types of instruments used for making voltmeter and ammeter.

5 Explain the acquisition time of S/H circuit

6 Explain what is meant by signal conditioning.

7 What are digital display devices

8 List the characteristics of LCD.

9 Which materials are used in piezoelectric transducer?

10 Elucidate about sensor.

PART-B (5 x 16 = 80)

11 a. What is standard? Explain the different types of standards.

OR

b. Explain in detail about calibration techniques.

12 a. Write short notes on (i) Current Transformer (ii) Potential Tranformer.

OR

b. Explain with neat circuit diagram the working of successive approximation type DVM.

13 a. Write the Short notes on (i) Analog to Digital Converter. (ii) Digital to Analog Converter.

OR

b. Give details of PC based DAS. Explain it briefly by supporting it with a schematic block diagram.

p.t.o

14 a. Explain the working of a circular chart recorder.

OR

b. 10.i) Explain the operating principles of LCD displays. ii) What are the advantages of LCD displays over LED displays?

15 a. Draw a neat sketch and explain the principle operation of Optical Transducer. Mention its Merits and Demerits.

OR

b. Explain the operating principle of a LVDT.

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Sl.No. 24688

Sl.No. 24617 SUBJECT CODE: 34715408/34716401

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FOURTH SEMESTER
ELECTRONIC CIRCUITS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Write down the types of switching regulators.

2 What are the types of voltage regulators?

3 What is DC load line?

4 Mention the advantages of fixed bias circuit.

5 Mention the methods of coupling multistage amplifiers.

6 Define the class C operation.

7 Give classification of amplifiers.

8 State the Barkhausen criterion.

9 What is Neutralization?

10 Define Astable Multivibrator.

PART-B (5 x 16 = 80)

11 a. Discuss the Operation of capacitor input filter with circuit diagram.

OR

b. Describe about shunt voltage regulator with circuit diagram.

12 a. Explain voltage divider biasing and derive the expression for its stability factor.

OR

b. Analyze the transistor amplifier circuit using h-parameters.

13 a. Describe the operation of Class A power amplifier with circuit diagram.

OR

b. Prove that the maximum efficiency of Class A transformer coupled power amplifier is 50% and that of class B type is 78.5%.

14 a. Explain with relevant information how the negative feedback amplifier improves stability, reduces noise and increases input impedance.

OR

b. Discuss about the working of RC Phase Shift oscillator with neat sketch. Also derive the expression for frequency of oscillation.

15 a. Draw and Explain class C tuned amplifier and derive its efficiency.

OR

b. Discuss about emitter coupled Astable Multivibrator circuit in detail.

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Sl.No. 24843 SUBJECT CODE: 34615501/34616501

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FIFTH SEMESTER
POWER ELECTRONICS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Why IGBT is very popular nowadays?

2 State circuit turn off time.

3 Mention the difference between controlled and uncontrolled rectifiers.

4 Give an expression for average voltage of single-phase semi converters.

5 What is meant by FM control in a dc chopper?

6 List out the advantages of load commutated chopper.

7 Mention the classification of inverter.

8 When the converter circuit acted as an inverter circuit?

9 List out the application of AC voltage controller.

10 What is meant by mid-point cycloconverter?

PART-B (5 x 16 = 80)

11 a. Write short notes on (i) Two transistor analogy of the SCR,

OR

b. Explain the construction and various Modes of operation of TRIAC.

12 a. Write a short note on Reactive Power control of converter and Performance parameters of converter.

OR

b. A Three-phase 3 pulse SCR controlled converter feeds an RL load with a freewheeling diode across the load. Discuss how freewheeling diode comes into play when supply voltage is passing through zero and becoming negative. Sketch waveforms

13 a. Write a descriptive note on Load Commutated Chopper with suitable diagram and waveforms.

OR

b. Enumerate the Concept of Buck Boost Regulator with its necessary diagrams.

14 a. List out the problems in the Basic series inverter? What are the assumptions made in the Modified series inverter and explain its operation with Wave forms?

OR

b. Explicate the working of a single-phase parallel inverter with relevant circuit and Waveforms.

15 a. What is a Step up Cycloconverter? Illustrate in detail with its suitable waveforms.

OR

b. What is a Step down Cycloconverter? Describe in detail with its necessary diagrams.

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Sl.No. 24875 SUBJECT CODE: 34615502/34616502

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FIFTH SEMESTER
POWER SYSTEM ANALYSIS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is the need for base values?

2 Write the formula for base current and base impedance of a 3φ system.

3 Explain Newton-Raphson method with load flow equation.

4 What is Jacobian matrix?

5 For a fault at a given location, rank the various faults in the order of severity.

6 Mention the equation to determine sub transient and transient internal voltage of the motor.

7 What are symmetrical components?

8 Mention the generated equation to determine sequence line currents.

9 How do you classify steady state stability limit? Define them.

10 Mention the simplified power angle equation and the expression for $P_{max.}$

PART-B (5 x 16 = 80)

11 a. Explain the need for system analysis in planning and operation of power system

OR

b. A 3ϕ Δ-Y transformer is constructed using three identical 1ϕtransformer of rating 200 KVA, 63.51kV/11kV transformer. The impedances of primary and secondary are 20+j 45Ω and 0.1 +j 0.2Ω respectively. Calculate the p .u impedance of the transformer.

12 a. Obtain the load flow equation for Newton – Raphson Method.

OR

b. Write the equations to calculate Slack bus power, Transmission losses and Line flows.

13 a. What are symmetrical components? Explain the symmetrical components transformation.

OR

b. A 1250KVA, 5000V generator with $X_d^{"}$ = 0.08p.u supplies a purely resistive load of 1000KW at rated voltage. The load is connected directly across the terminals of the generator. If all the three phases of the load are short circuited simultaneously find initial symmetrical short circuit current in the generator.

14 a. Derive an expression for the positive sequence current I_{a1} of an unloaded generator when it is subjected to a double line to ground fault.

OR

b. Derive symmetrical components of voltages in terms of phase voltages.

p.t.o

15 a. Derive the swing equation for a single machine connected to infinite bus system. State the assumptions if any and state the usefulness of this equation. Neglect the damping.

OR

b. Briefly explain the importance of stability analysis in power system planning and operation.

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Sl.No. 24918 SUBJECT CODE: 34615503/34616503

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

ELECTRICAL AND ELECTRONICS ENGINEERING

FIFTH SEMESTER

PROTECTION AND SWITCHGEAR

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Mention the classifications of the electrical protective relays.
2 Define time setting multiplier
3 What are the relays used for transformer protection?
4 Write a short notes on common transformer faults.
5 What is resistance switching?
6 Mention the methods of extinguishing the arc in circuit breaker.
7 Discuss the advantage and disadvantage of oil circuit breaker.
8 What is the function of arc shield in vacuum circuit breaker?
9 Define lightning.
10 Define counterpoises.

PART-B (5 x 16 = 80)

11 a. With a neat diagram explain the construction and working principle of induction type over current relay.

OR

b. Write about need of protection .Explain any one type of protective relay.

12 a. Write the short notes on:
i) Earth-fault protection for alternator.
ii) Combined leakage and over load protection for transformer.
iii) Earth-fault protection for transformer.

OR

b. Describe distance protection scheme for the protection of feeders.

13 a. Describe the phenomenon of capacitive current breaking.

OR

b. Explain breaking capacity and making capacity.

14 a. Describe briefly plain explosion pot and forced blast oil circuit breaker.

OR

b. Describe the constructional details and operation of a typical low oil circuit breaker. What are the relative merits and demerits.

15 a. Describe the various types of lightning discharge.

OR

b. Write a short note on the following surge diverter:
a) Rod gap diverter b) Horn gap diverter c) Expulsion gap type diverter.

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Sl.No. 24953 SUBJECT CODE: 34615507/34616507

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FIFTH SEMESTER
CONTROL SYSTEMS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Write the advantages and disadvantages of closed loop system.

2 State the basic properties of signal flow graph?

3 Define the term Transient and Steady State response.

4 What are Generalized Error Constants?

5 Shorty explain about Phase cross over Frequency and give its expression.

6 State Bode plot.

7 Enumerate the advantages of frequency response.

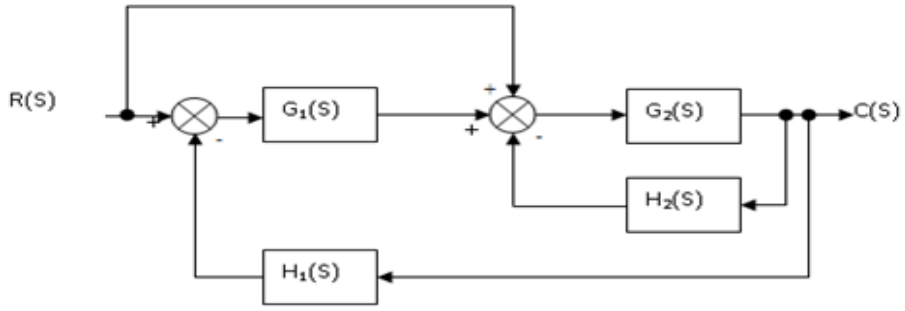
8 What will be the nature of impulse response when the roots of characteristic equation are lying on right half of the S-plane?

9 List out the three types of compensators.

10 List out the time domain specifications needed to design a control system.

PART-B (5 x 16 = 80)

11 a. The block diagram of a closed loop system is shown in the figure. Determine the closed loop transfer function C(s)/R(s) using the block reduction.



OR

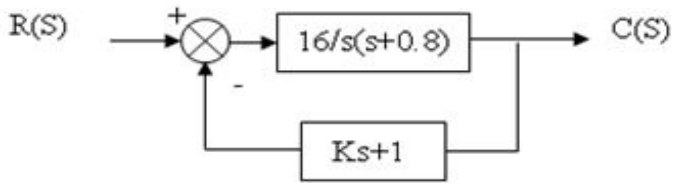
b. Explain about construction and working of synchros and servomotors with neat sketch.

12 a. Explain the time domain specifications of control system.

OR

P.T.O

b. A positional control system with velocity feedback is shown in fig. what is the response c(t) to the unit step input. Given that ς = 0.5. also calculate the rise time, peak time, maximum overshoot and settling time.



13 a. Draw the bode plot for the following transfer function and obtain gain cross-over frequency. G(S) = 20/S(1+3s)(1+4s).

OR

b. Plot the Bode diagram for the following transfer function and obtain the gain and phase cross over frequency. G(S)=10/S(1+0.4S)(1+0.1S).

14 a. Using Routh criterion, determine the stability of the system represented by the characteristics equation, s4+8s3+18s2+16s+5 = 0. Comment on the location of the roots of characteristics equation

OR

b. Explain about location of poles on S plane for stability in detail.

15 a. Realize Lag-lead compensator using electrical network.

OR

b. Write the design procedure of lead compensator using bode method.

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Sl.No. 25038 SUBJECT CODE: 34615508

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FIFTH SEMESTER
ELECTIVE - SPECIAL ELECTRICAL MACHINES

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Compare synchronous reluctance motor and induction motor.

2 What are the design considerations in synchronous reluctance motor?

3 List the different types of stepper motor

4 What is logic sequencer?

5 State hysteresis current control.

6 Mention the types of control techniques in SRM.

7 Give the types of permanent magnet BL SQW DC motor

8 Compare PMBLDC and DC motor.

9 When does a permanent magnet synchronous motor operate as synchronous reluctance motor?

10 Write the emf equation of permanent magnet synchronous motor.

PART-B (5 x 16 = 80)

11 a. Write short notes on
(i) Axial flux motor (ii) Radial flux motor

OR

b. A 3 – phase,400 V, 50Hz,4 – pole, star – connected synchronous reluctance motor, with negligible armature resistance, has Xsd = 8Ω and Xsq = 2Ω. For a load torque of 80 N-m, calculate (a) the load angle (b) the line current (c) the input power factor. Neglect rotational losses.

12 a. Illustrate the principle of operation and constructional feature of hybrid stepping motor.

OR

b. Describe the working of a 3 stack SM having 12 poles in the stator and rotor.

13 a. Describe the microprocessor based control in SRM with a neat block diagram.

OR

b. Derive the expression for torque development in SRM

14 a. Illustrate the votage and torque equation of PMBLDC motor.

OR

b. Elucidate torque – speed characteristics for ideal brushless DC motor.

15 a. Write short notes on
(i) Armature reaction emf (ii) Synchronous Reactance for PMSM

OR

b. Describe in detail about vector control of BLPM SNW Motor.

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Sl.No. 25028 SUBJECT CODE: 34615509

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
FIFTH SEMESTER
ELECTIVE - BIOMEDICAL INSTRUMENTATION

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is Electrode Potential (or) half cell potential?
2 Define Gauge Factor.
3 Define Operational Amplifier.
4 List the characteristics of Delta Waves.
5 Write the principle of Sphygmomanometer.
6 Define Residual Volume.
7 List the different types of blood flow meters.
8 Write down the characteristics of WBC.
9 List the factors affect the speed of Migration.
10 What is Immobilization of Bioreceptor?

PART-B (5 x 16 = 80)

11 a. Briefly explain about piezoelectric transducers as a arterial pressure sensors.

OR

b. Discuss about Thermocouple Temperature Transducers.

12 a. Explain about ECG lead system and its recording methods.

OR

b. Draw the block diagram of ECG and explain in detail.

13 a. Explain about Temperature Measurement.

OR

b. Explain about Paramagnetic Oxygen Analyzer.

14 a. Explain about Laser based blood cell counting.

OR

b. Explain about Coulter method to count the blood cells.

15 a. Explain a complete blood gas analyzer designed to measure pH, pCO_2, pO_2 from a sample of whole blood.

OR

b. Write the detail notes on flame photometer.

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Sl.No. 24765 SUBJECT CODE: 34615601/34616601

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SIXTH SEMESTER
SOLID STATE DRIVES

(Candidates admitted under 2015 & 2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Draw the diagram of an electric drive system.

2 State the condition of steady state stability.

3 What is known as half-controlled rectifier and fully controlled rectifier?

4 What are the advantages of three phase drives over single phase drives?

5 What is closed loop system?

6 List out the use of simulation software.

7 Give the applications of induction motors drives.

8 List out the disadvantages of stator voltage control method.

9 Give some applications of load-commutated inverter fed synchronous motor drive.

10 What is meant by margin angle of commutation?

PART-B (5 x 16 = 80)

11 a. Develop criteria for evaluating the steady state stability of an electrical drive.

OR

b. Explain in detail about various typical load torque characteristics.

12 a. Explain the operation of the chopper fed DC drive system in motoring and regenerative braking mode.

OR

b. Write brief notes on: i) Time - ratio Control ii) CLC Control of chopper circuit

13 a. Explain how the converter power output and controller characteristics are related.

OR

b. Draw and explain about uncontrolled rectifier and controlled rectifier scheme for voltage controlled dc drive.

14 a. Explain the operation of closed loop control of induction motor drives.

OR

b. Explain the various schemes of VSI fed Induction motor drives with its advantages and disadvantages.

15 a. Elucidate the operation of v/f control of multiple synchronous motors with schematic diagram.

OR

b. Draw and explain the construction and operational details about PMSM drive with its essential diagrams.

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Sl.No. 24705 SUBJECT CODE: 34615602/34616602

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SIXTH SEMESTER
HIGH VOLTAGE ENGINEERING

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Name any two devices which are first directly affected by direct lightning stroke.

2 Define attenuation and distortion for a travelling wave.

3 What are Trichelpulses?

4 Name the various mechanism of breakdown in vacuum.

5 List out the different forms of High Voltages.

6 What are the units available in multi test sets?

7 State the role of Hall Effect generators.

8 Draw the circuit diagram of electrostatic voltmeter.

9 What is 50% Flashover voltage?

10 What is meant by atmospheric correction?

PART-B (5 x 16 = 80)

11 a. Explain the switching over voltages in EHV and UHV systems.

OR

b. Explain with suitable diagram for Wilson's and Simpson's theory about charge formation in cloud.

12 a. Explain the mechanism of breakdown in commercial liquids.

OR

b. Write brief notes on treeing and tracking.

13 a. What is impulse current? Explain the operation of impulse generator with diagram.

OR

b. Draw and describe the construction and principle of operations of multistage impulse generator.

14 a. Briefly explain how a sphere can be used to measure the peak value of voltages. What are the parameters and factors that influence such voltage measurement?

OR

b. A generating voltmeter has to be designed so that it can have a range from 20 to 200 KV DC. If the indicating meter reads a minimum current of 2μA. What should the capacitance of the generating voltmeter be?

15 a. Classify and explain any one method of electrical test on circuit breakers

OR

b. Explain the partial discharge test on high voltage cables. How is a fault in the insulation located in this test?

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Sl.No. 25064 SUBJECT CODE: 34615603

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SIXTH SEMESTER
ELECTIVE - DESIGN OF ELECTRICAL APPARATUS

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is meant by Eddy current loss?

2 List out the properties of annealed copper.

3 List the factors that decide the choice of Specific Magnetic Loading.

4 What are the applications of dc special motors?

5 What is a Breather?

6 Write down the output equation of single phase and 3-phase transformer.

7 Define dispersion coefficient.

8 Discuss the relative merits of open and closed slots for Induction Motor Rotor.

9 What is Short Circuit Ratio?

10 Define Dispersion Coefficient.

PART-B (5 x 16 = 80)

11 a. Describe the various types of electrical engineering material.

OR

b. Describe about the ratings of Electrical machines.

12 a. Derive the expression of unbalanced magnetic loading.

OR

b. The output co-efficient of 1250kVA, 300rpm, synchronous generator is 200 KVA/m3-rps. Find the values of main dimensions of the machine if the ratio of length to diameter is 0.2.

13 a. Derive the output equation of single phase transformer.

OR

b. Explain in detail about the overall dimensions of the Transformer.

14 a. Write short notes on: (i) Harmonic induction torques. (ii) Harmonic synchronous torques.

OR

b. Design a cage rotor for a 40 HP ,3 phase ,400V ,50 Hz ,6 pole ,delta connected induction motor having a full load efficiency of 87% and a full load pf of 0.85.Take D=33cm and L= 17cm. Stator slots=54,conductors per slot =14. Assume suitable missing data if any.

15 a. Derive the output equation of Synchronous Motor.

OR

P.T.O

b. Determine the output coefficient for a 1500KVA, 2200 volt,3 phase,10 pole ,50 Hz star connected alternator with sinusoidal flux distribution. The winding has 60 degree phase spread and full pitch coils. ac=30000 amp.cond/m, B_{av} = 0.6Wb/m^2.If the peripheral speed of the rotor must not exceed 100m/sec and the ratio pole pitch to core length is to be between 0.5 and 1 .Assume an air gap length 6mm.Find also the approximate number of stator conductors.

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Sl.No. 25064

Sl.No. 24555 SUBJECT CODE: 34715602/34716602

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SIXTH SEMESTER
DIGITAL SIGNAL PROCESSING

(Candidates admitted under 2015&2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 How many stages are there for 8 point DFT?

2 List out any four properties of DFT.

3 What do you mean by bilinear transformation?

4 What is impulse invariant transformation?

5 List the features of FIR filter design using rectangular window.

6 What is window? Why is it necessary?

7 What is product quantization error?

8 Why rounding is preferred to truncation in realizing digital filter?

9 Write brief note on MAC unit.

10 What accumulator addressing?

PART-B (5 x 16 = 80)

11 a. An 8 point sequence is given by $x(n)=(2,1,1,2,1,1,1,1)$ compute 8 point DFT of $x(n)$ by Radix-2 DIT-FFT

OR

b. An 8 point sequence is given by $x(n)=(1,2,3,4,4,3,2,1)$ compute 8 point DFT of $x(n)$ by Radix-2 DIF-FFT.

12 a. i) Obtain the Direct form–I realizations of the LTI system governed by the equation

$$y(n) = 0.5y(n-1) - 0.25\,y(n-2) + x(n) + 3x(n-1)$$

ii) Determine the direct form II realizations for the following system

$$y(n) = -0.1y(n-1) + 0.72y(n-2) + 0.7x(n) - 0.252x(n-2)$$

OR

b. i. Apply bilinear transformation to the equation with T=1sec and find . p.t.o

$$H(s) = \frac{2}{(s+1)(s+2)}$$

ii. A digital filter with a 3dB bandwidth of 0.25π is to be designed from the analog filter whose system response is

$$H(S) = \frac{\Omega c}{S+\Omega c}$$

13 a. Design a filter with

$$H_d(e^{j\omega}) = \begin{cases} e^{-j3\omega}, & -\pi/4 \le \omega \le \pi/4 \\ 0, & \pi/4 \le \omega \le \pi \end{cases}$$

Using a Hamming window with N=7

OR

b. A filter is to be designed with the following desired frequency response

$$H(e^{j\omega}) = \begin{cases} 0, & -\pi/4 \le \omega \le \pi/4 \\ e^{-j2\omega}, & \pi/4 \le \omega \le \pi \end{cases}$$

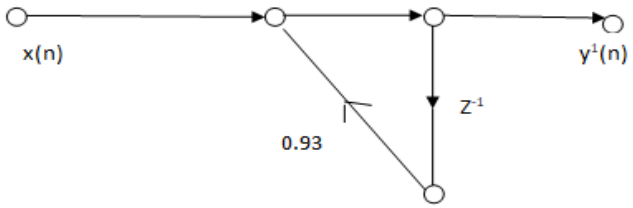
determine the filter coefficients h (n) if the window function is defined as

$$w(n) = \begin{cases} 1, & 0 \le n \le 4 \\ 0, & \text{otherwise} \end{cases}$$

14 a. Briefly explain finite word length effect in digital filters.

OR

b. For the recursive filter shown in figure the input x(n) has a peak value of 10V, represented by 6 bits. Compute the variance of output due to A/D conversion process?



15 a. Elucidate simplified architecture of TMS320C5x processor.

OR

b. Explain any four addressing modes of TMS320C5x processors with example.

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Sl.No. 24555

Sl.No. 24428 SUBJECT CODE: 34715603 / 34716603

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO EEE & MECHATRONICS

SIXTH SEMESTER

MICROCONTROLLER & APPLICATIONS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 How many data lines and address lines are available in 8086?

2 List the advantages of using segment registers in 8086.

3 Mention the various programmed data transfer method.

4 Mention the use of modem control unit in 8251.

5 What are the alternate functions of Port 3 in 8051 microcontroller?

6 Draw the memory structure of 8051

7 What is the function of SWAP instruction in 8051?

8 What is the function of MOVC instruction in 8051?

9 Draw the diagram of circuit to display single digit driver circuit.

10 Mention few limitations of Thermocouple.

PART-B (5 x 16 = 80)

11 a. Describe the logical and branching instruction set of 8086 with examples.

OR

b. Write an assembly language program for two 16 bit addition and subtraction using 8086.

12 a. With a neat diagram explain the function of 8253.

OR

b. With neat diagram explain the D/A Convertor using 8086.

13 a. Explain in detail about the special function registers available in 8051

OR

b. Write short notes on: a).Program Status Word (PSW) b. Interrupt Enable Register (IE)

14 a. Describe the various addressing modes in 8051.

OR

b. Discuss about control transfer instruction set of 8051 with examples.

15 a. Discuss on ADC interfacing with a neat diagram.

OR

b. Write short notes on: a). ADC b).. DAC

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Sl.No. 24488 SUBJECT CODE: 38215601/38216601

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
COMMON TO SOLAR, AUTO,EEE, MECHANICAL
SIXTH SEMESTER
PROFESSIONAL ETHICS AND HUMAN VALUES

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What are ethical values?

2 Define Integrity

3 What are the two forms of Self-respect?

4 Define Code.

5 What are the analytical methods?

6 Define Expert Authority.

7 What does Diligence mean?

8 Mention any four commandments of computer ethics?

9 Differentiate External Whistle Blowing and Internal Whistle Blowing.

10 What are the principles for conflict resolution?

PART-B (5 x 16 = 80)

11 a. "Honesty as Value" – Discuss with suitable example.

OR

b. Write an essay on Human Values in industries.

12 a. Briefly explain the three main levels of moral development, developed by Laurence Kohlberg.

OR

b. List and explain the steps in confronting moral dilemmas.

13 a. Highlight the importance of engineering ethics.

OR

b. Discuss the problems with law in engineering practice.

14 a. Describe the features, types and guidelines in Whistle blowing. Explain how corporations can prevent it among its employees.

OR

b. List some grey areas of confidentiality, and how management policies influence the maintenance of confidentiality.

15 a. Discuss on the participation in professional societies.

OR

b. Differentiate Human Rights and Professional Rights.

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Sl.No. 24492 SUBJECT CODE: 34115701

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
ENVIRONMENTAL SCIENCE AND ENGINEERING

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What are the effects of timber extraction on forests and tribal people?
2 Suggest two conservation methods in mineral resources.
3 Whether the energy flow in ecosystem is multidirectional.
4 What are called hot spots of biodiversity? Name any two hotspots of India.
5 Name any four air pollutants and their sources and effects.
6 When a sound is changes to noise?
7 Mention the significance of rain water harvesting.
8 Name the various methods of waste land reclamation?
9 What is AIDS? Name the source and mode transmission of HIV infection.
10 Expand ENVIS.

PART-B (5 x 16 = 80)

11 a. Write the problems that are faced by the natural resources in urbanization.

OR

b. Describe the effects of modern agriculture and fertilizers.

12 a. Explain various types of Ecological pyramids.

OR

b. Discuss the various measures to be followed for the conservation of biodiversity.

13 a. Write in detail about water pollution caused by the heavy metals presence .

OR

b. Explain the case studies due to i) Air pollution ii) Water pollution iii) Marine pollution.

14 a. Discuss water shed management.

OR

b. Explain the causes and effects of acid rain.

15 a. Write a detailed account on the AIDS disease, its transmission tests and prevention measures.

OR

b. Explain how the remote sensing satellites help in the study of environment.

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Sl.No. 24443 SUBJECT CODE: 34215708

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
COMMON TO BME, EEE, ECE & MECHATRONICS
SEVENTH SEMESTER
DISASTER MITIGATION AND MANAGEMENT

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is risk?

2 Describe storms

3 Write a brief note on floods as a serious environmental hazard.

4 How disasters are classified based on time?

5 Write the objectives of Trigger mechanism?

6 List the three types of preparedness?

7 Mention some areas where improvement is needed to reduce disaster.

8 What do you mean by panic management?

9 Write a short note on mitigation planning.

10 List the different funds available for disaster.

PART-B (5 x 16 = 80)

11 a. Explain in detail the causes of any four types of disaster.

OR

b. Explain the factors affecting the disaster

12 a. What determines the severity of a hazard?

OR

b. Explain the damage due to earthquake.

13 a. Enumerate the process of risk management.

OR

b. Describe the role of Internet Communication Technology for Disaster Management

14 a. Define logistic management.

OR

b. Define funding in Disaster management.

15 a. Describe the organizational structure for disaster management in India.

OR

b. Describe about the preparedness in development planning on disaster.

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Sl.No. 24582 SUBJECT CODE: 34615701

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
NON CONVENTIONAL ENERGY SOURCES AND APPLICATIONS

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Identify the key challenges to integrating renewable energy sources to existing grid?
2 Mention two policies in renewable energy by government of India.
3 What are the different instruments used to measure solar radiation?
4 What are the two different types of solar air heaters?
5 Write the equation for wind energy conversion.
6 Mention the different types of generators used exclusively for wind energy?
7 What is meant by Fermentation of biomass?
8 Write the end products from different biomass conversion technologies.
9 What are the best conditions for the tidal power generation?
10 What is the difference between a battery and fuel cell?

PART-B (5 x 16 = 80)

11 a. What are the strategies to meet the 2020 energy demand with RE sources in India?

OR

b. Explain the socio economic challenges to establish the different RE power plants in India.

12 a. Explain solar PV technology in detail.

OR

b. Write the construction and working of solar air heaters in detail.

13 a. What are the advantages and disadvantages of wind power plant? Explain in detail.

OR

b. Explain the different control mechanisms of a wind turbine?

14 a. What is anaerobic digestion? Explain fermentation and anaerobic digestion with the help of block diagram in detail.

OR

b. What is geothermal energy? What are the sources for geo thermal energy? Explain the advantages and disadvantages of geothermal energy in detail.

15 a. What is fuel cell? Explain the classification of different fuel cells in detail.

OR

b. Explain the use of hydrogen as a fuel in vehicles with example.

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Sl.No. 24720 SUBJECT CODE: 34615702

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
POWER SYSTEM OPERATION AND CONTROL

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Define Average demand.
2 Define load management.
3 State the advantages of state variable model.
4 What are the classification of system load?
5 Give the characteristics of line compensators.
6 What is known as brushless excitation?
7 What is meant by scheduled reserve?
8 Define short range hydro scheduling problem.
9 What is SCADA?
10 Define network topology.

PART-B (5 x 16 = 80)

11 a. Explain the load curve and load duration curve.

OR

b. Write a short note on load scheduling.

12 a. Explain about the load frequency control of single area system for steady state or static response?

OR

b. Explain the two area load frequency control system modeling.

13 a. Two units of generation maintained 66 KV line voltage at the ends of an interconnected of inductive reactance per phase of 30 ohms and with negligible resistance and shunt capacitance. A load of 20 MW is to be transferred from 66 KV unit to 60 KV unit. Calculate the necessary condition between the two nodes including the power factor of the current transmitted.

OR

b. Write short notes on: a). Shunt Capacitors b). Series Capacitors

14 a. What is a unit commitment problem? Discuss the constraints that are to be accounted unit commitment problem.

OR

b. Derive the coordination equation for economic dispatch neglecting losses.

15 a. Explain the state estimation method in power system.

OR

b. Explain various state transitions and control strategies using state transition diagram.

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Sl.No. 24792 SUBJECT CODE: 34615703

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

ELECTRICAL AND ELECTRONICS ENGINEERING

SEVENTH SEMESTER

ELECTIVE -SPECIAL ELECTRICAL MACHINES

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 List the advantages of increasing Ld/Lq ratio in synchronous reluctance motor.
2 What are the main differences between the axial and radial air gap motors?
3 Define step angle.
4 Define resolution.
5 Draw the circuit of PWM type current control.
6 What are the advantages of microprocessor based SRM drive?
7 Why the PMBLDC motor is called electronically commutated motor?
8 Compare PMBLDC motor and switched reluctance motor.
9 Draw the torque speed characteristics of PMSM.
10 List the features of PMSM.

PART-B (5 x 16 = 80)

11 a. Drive the voltage equation for synchronous reluctance motor.

OR

b. Draw and explain the Phasor diagram of synchronous reluctance motor. ii).Draw the Characteristics curves of synchronous reluctance motor.

12 a. Elucidate microprocessor control of stepper motor with necessary diagram.

OR

b. Explicate the different modes of excitation of VRSM.

13 a. With neat sketch explain the importance of closed loop control in SRM.

OR

b. Derive the expression for torque development in SRM.

14 a. Write short notes on a). Classification of PMBL DC Motor b). Compare electronic and mechanical commutator

OR

b. Write short notes on a). Mechanical commutator b). Electronic commutator

15 a. Explicate the emf equation of permanent magnet synchronous motor

OR

b. Describe the microprocessor based control of PMSM with a neat block diagram & list out its advantages.

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Sl.No. 24517 SUBJECT CODE: 34615704

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
ELECTIVE- HIGH VOLTAGE DIRECT CURRENT TRANSMISSION

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Mention the types of DC link.
2 Define SCR.
3 List out the basic firing schemes.
4 Write the draw backs of IPC
5 Draw the MTDC system configuration for bulk power transmission.
6 Mention the 2 advantages of Series and parallel MTDC system.
7 Write the base equation for per unit system for DC quantities.
8 List out the solution methodology of AC/DC power flow.
9 What is controller model?
10 What are the requirements of a good simulation?

PART-B (5 x 16 = 80)

11 a. Explain the major components of an hvdc transmission in converter station unit.

OR

b. Explain the technological development of modern trends in dc transmission

12 a. Explain briefly about detailed analysis of converters.

OR

b. With the help of block diagrams explain briefly about system control hierarchy.

13 a. Compare series and parallel MTDC system.

OR

b. List out the typical problems in MTDC system planning, design and operation, explain with its necessary figures.

14 a. Explain briefly about DC network Modeling of DC link with its necessary equation and example.

OR

b. Illustrate the power flow analysis with VSC based HVDC system.

15 a. Draw the transformer model and explain briefly.

OR

b. Explain in detail about transient simulation of DC and AC systems.

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Sl.No. 1446 SUBJECT CODE: 34615705

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- NOV/DEC - 2018
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
ELECTIVE - WIND ENERGY CONVERSION SYSTEM

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is Betz Coefficient?
2 Elucidate blade.
3 Define tip speed ratio.
4 Describe Active – Stall control.
5 List out the components of wind turbine model.
6 Write the components of power system modeling.
7 What is the need of variable speed system?
8 Write an expression for torque.
9 Illuminate the problems related with grid connection.
10 List out the various grid connection issues.

PART-B (5 x 16 = 80)

11 a. Explicate the wind energy conversion system Schemes

OR

b. Explain in detail about the sabinin's theory.

12 a. Describe the rotor design considerations in detail.

OR

b. Write short notes on a). Passive – Stall control b). Active – Stall control

13 a. Derive the transient model of Induction Generator.

OR

b. Write short notes on a). Model of wind gust speed c). Model of noise wind speed

14 a. Describe the DFIG wind power system model.

OR

b. Elucidate variable speed Variable frequency schemes in detail.

15 a. Enumerate stand alone wind energy conversion system in detail.

OR

b. Explain about Maximum power tracking in grid interfaced WECS with necessary diagrams.

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Sl.No. 24654 SUBJECT CODE: 34715706

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
SEVENTH SEMESTER
EMBEDDED SYSTEMS

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Define Processor.
2 Mention few examples of embedded system.
3 State the RS 232C.
4 Define UART.
5 Mention the most important feature in C that makes it a popular HLL for an embedded system?
6 What is Tree?
7 Define Interrupt?
8 Mention feature of IDE
9 Mention the use of Signal.
10 Define stack overflow?

PART-B (5 x 16 = 80)

11 a. Write short note on: a). Software Tools for Designing an Embedded System b). Software for Device Driver and Device Management in an Operating System

OR

b. Illustrate the abstraction of steps in the Design Process.

12 a. Explain the Parallel I/O, Bidirectional Device Ports with a neat diagram.

OR

b. Explain the USB Bus involved in serial data communication with neat diagram.

13 a. Write short notes on the program Elements: a). Data types and pointers with example b). Queue

OR

b. Elaborate on use of function calls with example.

14 a. Describe the Object Oriented Interfacing.

OR

b. Elaborate about Assembler Directives.

15 a. Discuss about Timer Function with an example.

OR

b. Illustrate on Encapsulation using semaphore and Queues with example and provide the function for hard real time systems.

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Sl.No. 24403 SUBJECT CODE: 34615801

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
EIGHTH SEMESTER
ELECTIVE -BIO MEDICAL INSTRUMENTATION

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Define transducers.

2 Give the different types of Electrodes.

3 List the requirements of an instrumentation amplifier.

4 What is Evoked potential?.

5 Define Apnoea.

6 Explain in brief about murmurs.

7 What is Fibrinogen?

8 Write the main role of Blood Platelets.

9 What is Photometer?

10 Mention some types of Biosensors.

PART-B (5 x 16 = 80)

11 a. Describe in detail about the basic component of a Biomedical System.

OR

b. Discuss about Surface electrodes in detail.

12 a. Discuss about different types of placement of electrodes in EEG measurement system and analysis of EEG waveforms.

OR

b. Explain about EEG recording method with a neat block diagram.

13 a. Explain about Temperature Measurement.

OR

b. Write short notes on Lung volumes and capacities.

14 a. Briefly explain about Hematocrit Determination.

OR

b. Explain about Coulter method to count the blood cells.

15 a. Explain the principle of auto analyzer with a neat diagram.

OR

b. Discuss about measurement of blood pco2.

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Sl.No. 2449 SUBJECT CODE: 34615802

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
EIGHTH SEMESTER
ELECTIVE -FLEXIBLE AC TRANSMISSION SYSTEMS

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1	Write the advantages of SVC dynamic characteristics.
2	What are the types of FACTS controllers?
3	What are the advantage of SVC?
4	How will you consider influence of SVC on system voltage without considering coupling transformer?
5	Define blocking mode operation mode of TCSC.
6	What is the need of firing angle limits of the TCSC.
7	How the response of STATCOM obtained at low system voltage?
8	What mode the operation of shunt converter and series converter depends in UPFC?
9	What are the possible interaction occur in Electrochemical small disturbance?
10	Define Linear Quadratic Regulator (LQR).

PART-B (5 x 16 = 80)

11 a.	What are the basic types of facts controllers explain in short.
	OR	
b.	Describe briefly load and system compensation schemes.	
12 a.	Briefly describe the way by which the transient stability is enhanced due to static var compensator.
	OR	
b.	Discuss the influence of SVC on system voltage with representation of power system.	
13 a.	Explain the principle of operation of TCSC with relevant schematic.
	OR	
b.	Enumerate the modeling of TCSC to enhance the system stability.	

14 a. Explain the application of STATCOM briefly.

OR

b. Explain different modes of operation of UPFC with relevant phasor diagram.

15 a. Investigate the SVC-SVC controller interaction in a large power system.

OR

b. Explain briefly about the FACTS POD controller.

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Sl.No. 24666 SUBJECT CODE: 34615803

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
EIGTH SEMESTER
ELECTIVE- WIND ENERGY CONVERSION SYSTEMS

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Describe aero turbine

2 Define pitch angle

3 What is the mechanism of Yaw control?

4 State the advantages of vertical axis wind turbine over horizontal axis.

5 What is meant by constant speed constant frequency system?

6 Write the expressions for synchronous speed

7 Define cut – in speed

8 What are the types of variable speed drive schemes?

9 Illustrate the requirements of grid integration

10 What is fixed speed wind turbine?

PART-B (5 x 16 = 80)

11 a. Write short notes on i). Blades ii). Nacelle iii). Gear Box iv). Brake v). Yaw System

OR

b. Explain in detail about sabinin's theory

12 a. Explain in detail about the main components of Vertical Axis Wind Turbine.

OR

b. Briefly Compare HAWT & VAWT.

13 a. Derive the expression for transient model of induction generator.

OR

b. Explain in detail about the factors considered for choice of selection of generators for WECS.

14 a. Explain about PMSG based WECS

OR

b. Describe the DFIG wind power system model

15 a. Briefly explain about the stand alone wind energy conversion system

OR

b. Describe in detail about problems related with grid connection system.

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Sl.No. 24527 SUBJECT CODE: 34615804

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
EIGHTH SEMESTER
ELECTIVE- HIGH VOLTAGE DIRECT CURRENT TRANSMISSION

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Write the importance of converter station.

2 Write the importance and types of filter.

3 List out the basic firing schemes.

4 Write the importance of filter.

5 State MTDC system.

6 Mention the 2 advantages of Series and parallel MTDC system.

7 What is meant by power flow analysis?

8 Draw the schematic of a converter.

9 Write the application of DC simulator

10 What are the requirements of a good simulation?

PART-B (5 x 16 = 80)

11 a. Explain the major components of an hvdc transmission in converter station unit.

OR

b. Explain the technological development of modern trends in dc transmission

12 a. Explain briefly about detailed analysis of converters.

OR

b. Briefly explain about the types firing angle control

13 a. Compare series and parallel MTDC system.

OR

b. Write briefly about voltage limiting control and decentralized current reference balancing method

14 a. Explain briefly about DC network Modeling of DC link with its necessary equation and example.

OR

b. Draw the 5 terminal MTDC systems, explain with its necessary diagrams.

15 a. Draw the transformer model and explain briefly.

OR

b. Explain briefly valve model and generation of control voltage.

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Sl.No. 24592 SUBJECT CODE: 34615805

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
EIGTH SEMESTER
ELECTIVE-POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEM

(Candidates admitted under 2015 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is GHG emission?
2 List various factors affecting Bio digestion.
3 Why are induction generators preferred over dc generators in WECS?
4 What is the principle of operation of PMSG?
5 Draw the schematic diagram of line commutated converter.
6 What are the advantages of dc link inverters?
7 List the merits of variable speed wind energy conversion system.
8 What are the issues created in grid integrated PMSG based WECS?
9 What are hybrid systems?
10 What are the applications of solar PV system?

PART-B (5 x 16 = 80)

11 a. Describe the consequences of greenhouse effect.

OR

b. Explain the design and principle of operation of general Fuel cell and Fossil Fuel cell.

12 a. Explain the principle of operation of DFIG used for renewable energy conversion.

OR

b. Explain the analysis of Induction Generator used for Wind Energy ConversionSystem.

13 a. Describe how a three phase line commutated converter is operated as an inverter.

OR

b. A single phase full bridge inverter has a resistive load of R=3Ωand the DC input voltage is Edc=50V. Compute the RMS output voltage at the fundamental frequency, the output power, the average and peak currents of each thyristor and peak reverse blocking voltage of each thyristor.

14 a. Explain the operation of grid integrated PMSG system with a neat block diagram.

OR

b. Explain how the isolation and temperature affects the I-V characteristics of a solarcell

15 a. Explain various strategies used for the operation of an MPPT.

OR

b. With a neat sketch, explain the operation of PV-Diesel hybrid system.

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Sl.No. 24830 SUBJECT CODE: 34115203/34116203

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
COMMON TO
AERO,AUTO,CSE,BME,CIVIL,EEE,ECE,IT,MECH,MECT

SECOND SEMESTER

TRANSFORMS AND MATRICES

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Find the sum and product of the Eigen values of $\begin{pmatrix} 1 & 2 & -2 \\ 1 & 0 & 3 \\ -2 & -1 & -3 \end{pmatrix}$

2 Using Cayley- Hamilton theorem, find A^{-1} of $\begin{pmatrix} 1 & 2 \\ 4 & 3 \end{pmatrix}$

3 Prove that $L\left[t^{\frac{-1}{2}}\right]=\sqrt{\frac{\pi}{s}}$

4 If $L[t\sin\omega t]=\frac{2\omega s}{\left(s^2+\omega^2\right)^2}$, evaluate $L[\omega t\cos\omega t+\sin\omega t]$

5 Find $L^{-1}\left[\frac{1}{(s+1)^2+1}\right]$

6 State convolution theorem

7 State Fourier integral theorem

8 Find the Fourier sine transform of e^{-3x}

9 Show that $Z\left[a^n f(n)\right]=f\left(\frac{z}{a}\right)$

10 Define Inverse Z-transforms:

PART-B (5 x 16 = 80)

11 a. Verify Cayley Hamilton theorem for the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 2 & -1 & 4 \\ 3 & 1 & -1 \end{bmatrix}$ and hence find A^4

OR

b. Diagonalise the matrix $A=\begin{bmatrix} 1 & -1 & 0 \\ -1 & 2 & 1 \\ 0 & 1 & 1 \end{bmatrix}$ by orthogonal reduction

12 a. (i) Find the Laplace transform of $e^{-t}\int_0^t t\cos t\,dt$

(ii) Find the Laplace transform of $\int_0^t \left(u^2-u+e^{-u}\right)du$

OR

b. (i) If $L[f(t)]=F(s)$, prove that $L[f(at)]=\frac{1}{a}F\left(\frac{s}{a}\right)$

(ii) Find the Laplace transform of $f(t)=\begin{cases} \sin t, & 0<t<\pi \\ 0, & t>\pi \end{cases}$

13 a. Find $L^{-1}\left[\frac{1-s}{(s+1)(s^2+4s+13)}\right]$ by using method of partial fractions

OR

b. Solve $\frac{dx}{dt}-2x+3y=0$; $\frac{dy}{dt}-y+2x=0$, with $x(0)=8$, $y(0)=3$

14 a. Find the Fourier cosine transform of e^{-x^2}

OR

b. (i). Find Fourier cosine transform of $f(x)=\begin{cases} \cos x & if\ 0<x<1 \\ 0 & otherwise \end{cases}$

(ii) Find the Fourier sine transform of $3e^{-4x}+4e^{-3x}$

15 a. Find the inverse Z-transform of $F(z) = \frac{1}{1-az^{-1}}, |z| > |a|$ using power series method.

OR

b. (i) Prove that $Z[\cosh at \sin bt]$

(ii) Find $Z\left[\sin^2 \frac{n\pi}{4}\right]$ *and* $Z[\sin(3n+5)]$

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Sl.No. 24830

Sl.No.27872 Sub.Code: 34116201/34115201

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)

B.E DEGREE EXAMINATIONS – APRIL/MAY 2019

COMMON TO ALL BRANCHES

Second Semester

BUSINESS ENGLISH

(Candidates admitted under 2015 & 2016 Regulations-CBCS)

Time: Three hours Maximum:100Marks

Answer **ALL** questions

PART – A (10 x 2 = 20 marks)

1. **Correct the following sentences using subject and verb agreement.**
   - **i)** He carried some luggages.
   - ***ii)*** Thousand miles are a long way.

2. **Fill in the blank with suitable prepositions.**
   - **i)** They ceased work _____ sunset..
   - **ii)** He is quite different _____ his friend.

3. **Combine the sentences showing cause and effect relations.**
   - i) The gas is wet. It has to be dried
   - ii) The temperature increases. The volume of the gas increases.

4. **Write the meaning for the following phrasal verbs and make sentences of your own.**
   - i) Agree with
   - ii) Call upon.

5. **Make your own sentences using the following idiomatic phrases.**
   - **i)** Catch one's eye
   - **ii)** Feather in one's cap

6. **Find out the stress for the following words.**
   - **i)** Television.
   - ii) Cordiality

7. **Write British English words for the following American English words.**
   i) Analyze ii) Fulfill

8. **Write American English words for the following British English Words.**
   - **i)** Fullfil.
   - **ii)** Humour.

(p.t.o)

9. Make your own sentences for the following compound words.

i) Computer manual.

ii) Computer technology.

10. **Read the answers and frame the questions.**

i) I come from Bangkok

ii) She has already finished

PART – B (5 x 16 = 80 marks)

11. a) Enumerate the guidelines to write an effective e-mail.

OR

b) Write some questions frequently asked in interviews.

12. a) Write a set of eight recommendations that should be followed to save water.

OR

b) Write a set of eight important instructions that will help to control noise pollution in cities

13. a) Prepare a checklist before you go on a weeklong tour with your family members.

OR

b) Imagine that you have to conduct a two-day conference in your college. Prepare a checklist of ten important activities that you would like to do

14. a) **Rewrite the following jumbled sentences in the correct order**.

i. If that strikes oil, then production wells can be drilled.

ii. They carry out surveys from the ground and from the air using a variety of instruments. And they bore into the rocks to take samples.

iii. When Petroleum engineers search for oil, they look for certain types of rock layers, or strata, which they know from past experience, can trap oil.

iv. If it indicates that oil may be present, a test well is drilled.

v. Oil is found underground trapped in the layers of rock.

vi. When all the information is collected and analyzed, of the underground strata is obtained.

vii. They also set off explosions in the ground and record the waves reflected from the underground rock layers.

viii. This is called seismic surveying.

OR

b) What are the strategies for critical reading?

.

15. a) Write a letter to Venus electronics Salem for the purchase of home appliances. Call for the quotation of the following items. Assume that you are the purchase officer.

Items	**Nos**
Preeti mixer	1
Microwave oven	1
Butterfly stove	1
Grinder	1
Electric cooker	2

OR

b) Write a letter to the Division Engineer, TNEB complaining about frequent power failure in your area.

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Sl.No. 24984 SUBJECT CODE: 34716201/34715201

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO CSE,BME ,EEE,ECE AND MECT

SECOND SEMESTER

ELECTRONIC DEVICES

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 State the charge mobility of n type semiconductor

2 When a reverse bias is applied to a germanium PN junction diode, the reverse saturation current at temperature is 0.3μA. Determine the current flowing in the diode when 0.15v forward bias is applied at room temperature.

3 Give the expression for drift current.

4 What is meant by Fermi level?

5 Give the structure of a PIN diode.

6 What are the advantages of photo diode?

7 Sketch the transfer characteristics of JFET.

8 Compare P channel and N channel MOSFET.

9 Define holding current.

10 Define Dynamic resistance.

PART-B (5 x 16 = 80)

11 a. Explain the motion of charge in uniform electric fields and magnetic fields.

OR

b. Write short notes on i) Parallel Electric and Magnetic fields, ii) Perpendicular Electric and Magnetic fields.

12 a. Discuss the band structure of PN junction using its relevant diagrams..

OR

b. Write and explain the diode equation.

13 a. Explicate the characteristics of Tunnel diode and its application.

OR

b. What are the applications of Light Emitting Diodes? Explain the operation of light emitting diodes with its construction.

14 a. Explain the input and output characteristics of a transistor in CB configuration with neat diagram.

OR

b. Write brief notes on Volt-Ampere characteristics of JFET.a). Explain how FET act as a variable resistor. b).Compare JFET and BJT.

15 a. Enlighten the operational characteristics of SCR.

OR

b. Describe the construction and working principle of SCR with V-I characteristics.

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Sl.No. 24948 SUBJECT CODE: 35015201/35016201

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO ALL BRANCHES

SECOND SEMESTER

C PROGRAMMING

(Candidates admitted under 2015 & 2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Define Variable in C
2 What are types of Constants in C?
3 Write a c program to find a number is odd or even.
4 Write the Write the difference between while and do-while statement.
5 Define structure in C.
6 Differentiate structure and union.
7 What is an Enumerated Data type?
8 Write short notes about * operator in pointer.
9 List out the preprocessor directives.
10 How to close a file in C?

PART-B (5 x 16 = 80)

11 a. Write short notes on following with example.
i) identifier ii) variable iii) keyword iv) data type

OR

b. Write a C program
i) To find sum of 5 numbers. ii) To find simple interest.

12 a. Explain the different types of unformatted I/O statements in C

OR

b. Write a C program
a. i. To find the factorial of a given number using while statement
b. ii. To find the factorial of a given number using for statement

13 a. Describe the following with example,
i)strlen( ) function ii)strcat( ) function
iii)strcpy( ) function iv)strcmp( ) function

OR

b. Write a C program to print the student name, roll no, average marks using structure

14 a. Discuss the pointer expressions used in the C program.

OR

b. Explain the concept of pointer to function.

15 a. Write a C program to implement the concept of dynamic memory allocation in C.

OR

b. Write a C program to implement fprintf( ) and fscanf( ) function.

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Sl.No. 24857 SUBJECT CODE: 34115303/34116304

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO CIVIL, EEE & MECHATRONICS

THIRD SEMESTER

PDE APPLICATIONS AND COMPLEX ANALYSIS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Obtain the partial differential equation by eliminating arbitrary constants a and b from $(x-a)^2+(y-b)^2+z^2=1$

2 Solve $(D^3-3DD'^2+2D'^3)z=0$.

3 Define Fourier Series.

4 In the Fourier series expansion of $f(x)=|\sin x|$ in $(-\pi,\pi)$, What is value of b_n.

5 Find the nature of the P.D.E $4u_{xx}+4u_{xy}+u_{yy}+2u_x-u_y=0$.

6 State any two laws assumed to derive the one dimensional heat flow equation.

7 Show that the function $x^4-6x^2y^2+y^4$ is harmonic

8 List the invariant points of $w=\frac{1+z}{1-z}$

9 Find the residue of $\frac{z+2}{(z-2)(z+1)^2}$ at $z=2$.

10 Evaluate $\int_c \frac{dz}{(z-3)^2}$ where C is the unit circle $|z|=1$

PART-B (5 x 16 = 80)

11 a. Solve $r+s-6t=y\cos x$

OR

b. Solve $(D^3-7DD'^2-6D'^3)z=\sin(x+2y)+e^{2x+y}$

12 a. Determine the first two harmonic of the Fourier series for the following values

x	0	1	2	3	4	5
$f(x)$	9	18	24	28	26	20

p.t.o

OR

b. Find the Fourier series expansion of period 2π for the function $y = f(x)$ which is defined in $(0, 2\pi)$ by means of the table of value given below. Find the series up to the third harmonic

x	0	$\frac{\pi}{3}$	$\frac{2\pi}{3}$	π	$\frac{4\pi}{3}$	$\frac{5\pi}{3}$	2π
y	1.0	1.4	1.9	1.7	1.5	1.2	1.0

13 a. Solve the heat flow Equation $\frac{\partial u}{\partial t} = \alpha^2 \frac{\partial^2 u}{\partial x^2}$ subject to the following Boundary conditions $u(0,t) = 0, u(l,t) = 0$ *and* $u(x,0) = x$.

OR

b. A rod 30 cm long has its ends A and B kept at 20^0 C and 80^0 C respectively until steady state conditions prevail. The temperature at each end is then suddenly reduced to 0^0 and kept so. Find the resulting temperature function u(x, t) taking x = 0 at A.

14 a. Find the analytic function $f(z) = u + iv$ if $u + v = \frac{x}{x^2 + y^2}$ and $f(1)=1$

OR

b. Find $f(z) = u + iv$ given that $u - 2v = e^x(\cos y - \sin y)$

15 a. Using contour integration evaluate $\int_0^{2\pi} \frac{d\theta}{5 - 4\sin\theta}$

OR

b. Evaluate $\int_c \frac{Sin\pi z^2 + Cos\pi z^2}{(z-1)(z-2)} dz$ where c is $|z| = 3$

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Sl.No. 24891 SUBJECT CODE: 34415301/34416304

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
THIRD SEMESTER
POWER PLANT ENGINEERING

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 How do you classify Hydro power plants?

2 Where should be surge tank located?

3 Name the different types of burners.

4 What are the advantages of closed cycle gas turbine?

5 What are the advantages of fast breeder reactor?

6 What is the basic principle of tidal power plant?

7 What is meant by cost analysis?

8 What is meant by load duration curve?

9 What are the advantages of MHD system?

10 List out any two direct energy conservation system.

PART-B (5 x 16 = 80)

11 a. How the hydro-electric power plants are classified.

OR

b. Discuss the environmental effects of hydro power plant Site selection.

12 a. What are the different types of pulverizing mills? Explain any one.

OR

b. Draw and explain the steam and gas turbine combined power cycles.

13 a. With a neat sketch explain the layout of nuclear power plant.

OR

b. Discuss the principle of tidal power plant with a neat sketch.

14 a. A power plant has the following annual factors: load factor = 0.70, Capacity factor = 0.55, Use factor = 0.60.If the maximum demand of the power plant is 40MW. Calculate (i) Annual energy production, (ii) Reserve capacity over and above the peak load and (iii) Hours during which the plant is not in service per year.

OR

b. Determine the annual cost of diesel power station from the following data:
Capital cost = Rs 60x 105
Salvage value =6%
Life = 20 years
Annual repair and maintenance cost = Rs 32000
Annual cost of fuel = Rs 80000
Labour cost per month = Rs 900
Interest on sinking fund = 5%

15 a. Explain the principle of thermionic power generation.

OR

b. Explain with a neat sketch of an open cycle MHD steam plant.

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Sl.No. 24971 SUBJECT CODE: 34615301/34616302

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO EEE AND MECT

THIRD SEMESTER

ELECTRIC CIRCUIT ANALYSIS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Describe the term network

2 What is passive element? Give examples.

3 What is the necessity of network reduction?

4 Write the equation to find the load current in Norton's theorem.

5 What do you mean by coefficient of coupling?

6 In rectangular form, what is the value of impedance and admittance?

7 Give the relation connecting the power factor angle with the two wattmeter readings.

8 What are the main objectives of interconnection of the phases?

9 Draw the sinusoidal response of R-L -C circuit and write the differential equation.

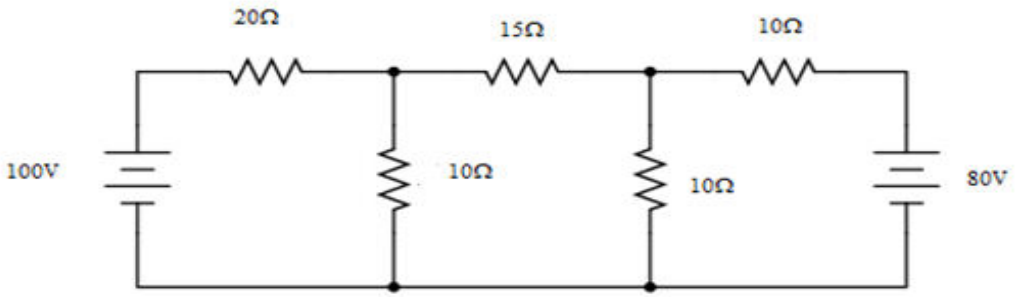
10 Define damping ratio

PART-B (5 x 16 = 80)

11 a. Explain the voltage – current relationship of resistors, inductor and capacitor in AC circuit

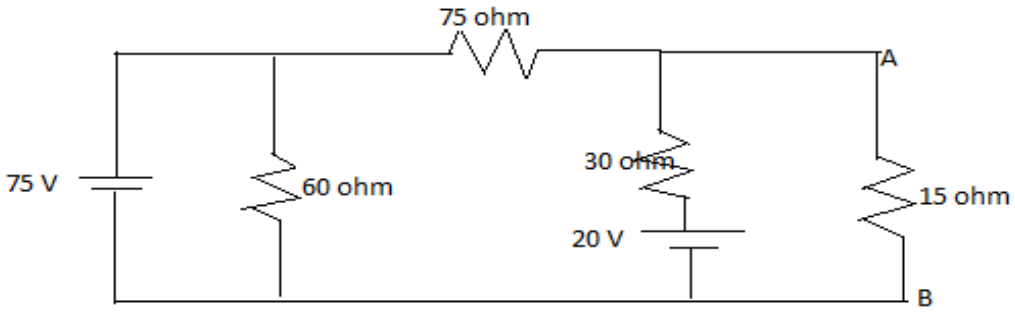
OR

b. Find the currents I_1, I_2, I_3 and the voltages V_a and V_b in the network of figure by using nodal analysis.



12 a.

(a)Find the voltage across the 15 ohm resistor by using Norton's theorem



OR

b. Derive the expression for
i)Star to Delta conversion
ii)Delta to Star conversion

13 a. i) Derive the resonant frequency of series circuit.
ii) Short notes on Q- factor and its effect on band width.

OR

b. A current source is applied to a parallel combination of R, L & C, where R =10□,
L =1H, & C=1□ F.
A) Compute the resonant frequency.
B) Find the quality factor.
C) Calculate the value of the bandwidth.
Compute the lower and upper half frequency points of the band width.

14 a. Explain three phase power measurement by 2 wattmeter method for star and delta connected load and determine the power equation and draw the phasor diagram.

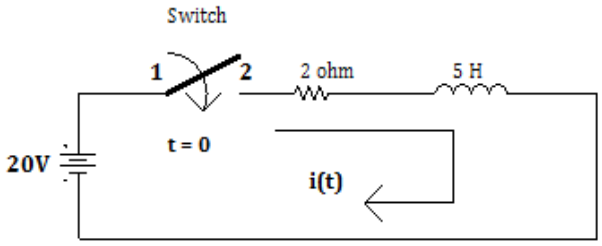
OR

b. i)A balanced delta connected load takes a line current of 15 A when connected to a balanced 3 phase 400 v system. A wattmeter with its current coil in one line and Potential coil between the two remaining lines read 2000W. Describes the load Impedance.
ii) In a balanced 3 phase system, the power is measured by 2 wattmeter method and the Ratio of two wattmeter method is 2:1.Determine the power and power factor.

15 a. Draw the DC response of R-L circuit and derive the power equation of resistor and inductor.

OR

b. In the circuit shown in figure below find the expression for transient current after the switch is closed at t=0, assuming zero initials conditions.



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Sl.No. 25006 SUBJECT CODE: 34615302/34616303

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
B.E.DEGREE EXAMINATIONS- APR/MAY - 2019
ELECTRICAL AND ELECTRONICS ENGINEERING
THIRD SEMESTER
ELECTRICALMACHINES - 1

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Illustrate permeability

2 State Faradays law of electromagnetic induction.

3 What is Step Down Transformer?

4 Explain the term Percentage impedance as applied to Transformer.

5 Write the application of Single and doubly fed magnetic systems.

6 Write the equation which relates rotor speed in electrical and mechanical radians per second.

7 State distribution factor.

8 What are full chorded and short chroded coils?

9 Mention the types of armature winding

10 Enumerate the factors on which speed of a D.C motor depends.

PART-B (5 x 16 = 80)

11 a. Two coils A and B are kept in parallel planes,such that 70 % of the flux produced by coil A links with coil B. coil A has 10,000 turns. Coil B has 12,000 turns. A current of 4 A in coil A produces a flux of 0.04mWb while a current of 4A in coil B produces a flux of 0.08mWb.Calculate, (1)Self inductance La and Lb (2) Mutual inductance M (3) Coupling coefficient.

OR

b. i) Elucidate the expression for magnitude of self induced E.M.F ii) . If a coil has 500 turns is linked with a flux of 50 mWb, when carrying a current of 125 A. Calculate the inductance of the coil. If this current is reduced to zero uniformly in 0.1 sec, Calculate the self induced e.m.f in the coil.

12 a. Explicate the construction of a Single Phase Transformer in detail.

OR

b. A single phase transformer has 500 turns on primary and 1000 turns on secondary. The voltage per turn in the primary winding is 0.2 volts. Calculate a). Voltage induced in the primary winding b). Voltage induced in the Secondary winding c). The maximum value of the flux density if the cross section area of the core is 200 cm^2 d). KVA rating of the transformer if the current in primary at full load is 10 A, the frequency is 50 Hz.

13 a. Write a note on energy flow in electro mechanical energy conversion devices.

OR

b. For a singly excited system derive the expression for electrical energy input.

14 a. Explain the various types of three phase A.C windings with necessary diagrams.

OR

P.T.O

b. Derive the expression for the generated voltage in A.C machine.

15 a. Develop an expression for the demagnetizing and cross magnetizing armature ampere turns in a D.C generator.

OR

b. Explicate the operation of D.C Series motor starter with neat sketch.

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Sl.No. 25006

Sl.No. 25055 SUBJECT CODE: 34616304/34615303

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

ELECTRICAL AND ELECTRONICS ENGINEERING

THIRD SEMESTER

MATHEMATICAL MODELLING AND SIMULATION

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 How many variables available in SCILAB?
2 Write short notes on overloading.
3 State the function of the command 'xpolys'.
4 Mention the role of loading and save the graphic
5 Define linking.
6 Write few important of an Interface.
7 What do you mean by kalman filter?
8 What do you mean by non stiff ODE integrator?
9 State the command 'Across'.
10 Describe the function 'Through'.

PART-B (5 x 16 = 80)

11 a. State the term 'function'. Explain briefly about how to declare a function? With example.

OR

b. Explain the following operation (i) debugging (ii) return statement (iii) arguments.

12 a. Write a detailed note on different parameters of plot function in SCILAB.

OR

b. Write a program to plot a heart curve in 2D plot.

13 a. State and explain dot product of vector function with suitable example.

OR

b. State and explain with suitable program for sparse matrices.

14 a. Write a program to solve the analytical solutions of RLC circuits.

OR

b. Write a suitable program to solve improper system's non linear solution.

15 a. Briefly explain a function of Capacitor discharge through a resistor with suitable program and discharge function chart.

OR

b. A 230V, 50HZ, 1 phase AC supply given with transformer ratio 0.25 and the secondary of the transformer connect to diode in series with 200 Ω Resistor. Find the output current, PIV, Output frequency.

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Sl.No. 24929 SUBJECT CODE: 34715302/34716301

VINAYAKA MISSIONS RESEARCH FOUNDATION

(Deemed to be University)

B.E.DEGREE EXAMINATIONS- APR/MAY - 2019

COMMON TO BME,EEE & ECE

THIRD SEMESTER

DIGITAL ELECTRONICS

(Candidates admitted under 2015/2016 Regulations-CBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 What is the minimum number of bits required to encode the decimal digits 0 through 9? Justify your answer.

2 Mention the types and uses of complements in a number system

3 Convert the given expression in canonical SOP form Y = AC + AB + BC

4 State the limitations of karnaugh map.

5 Give the logical expression for sum and carry of a half adder.

6 What do you meant by comparator?

7 Give the truth table of SR flip flop.

8 Define race around condition.

9 Define control logic.

10 Mention the function of algorithmic based behavioural description in HDL.

PART-B (5 x 16 = 80)

11 a. i) Convert the hexadecimal number 68BE to binary and then from binary convert it to octal.
ii) Convert the following binary numbers to hexadecimal (1.11010), (1110.10), (010100101011.0101101)
iii) Add the binary numbers: i) 1011 and 1100 ii) 0101 and 1111.

OR

b. a) With a suitable example explain the signed binary numbers in detail.
b) i)Multiply the binary numbers 1001 by 1101 ii) Subtract the binary number 1011 and 0110.

12 a. Simplify the following functions using K- map technique and draw the equivalent diagram for the output function by using logic gates.
. i)$F(A,B,C,D) = \sum m(7,8,9) + d(10,11,12,13,14,15)$
. ii)$F(A,B,C,D) = \pi M(1,3,7,11,15) . d(0,2,5)$

OR

b. Prove that NOR gate is an universal gate. Also, prove the same for NAND gate.

13 a. Describe the Magnitude Comparator in detail.

OR

b. Explain the gate level modelling technique of HDL in combinational circuits

P.T.O

14 a. With logic circuit & truth table explain the operation of JK flip flop.A

OR

b. Design a 3 bit binary UP/DOWN counter with a direction control M. Use JK Flip-Flops.

15 a. Illustrate ASM with suitable example.

OR

b. Illustrate race free design.

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