CENTRAL BHARAT SEVAK SAMAJ

NATIONAL DEVELOPMENT AGENCY, ESTABLISHED IN 1952 BY PLANNING COMMISSION, GOVT. OF INDIA

CENTRAL BOARD OF EXAMINATIONS

BSS NATIONAL VOCATIONAL EDUCATION MISSION

EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FIRST YEAR) EXAMINATION NOVEMBER-2025

EEE001-01 COMMUNICATIVE ENGLISH AND COMPUTER FUNDAMENTALS

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) Verb is an _____ word

2) One day _____ Old man came to my village.

3) The tiger _____ A deer

4) He travelled _____ Ticket.

5) My school is _____ the church.

6) Function keys are _____

7) _____ is called father of computer

8) Key board shortcut for undo command is _____

9) In MS Word print is in _____ menu

10) To draw curved lines _____ is used

11) A sheet can be renamed using _____ facility in Ms Excel

12) Corel draw is based on _____ graphics.

13) _____ is used to click and drag to create duplicate.

14) CPU stands for _____

15) Scanner is a _____ device

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) Define active and passive voice?
2) Define kinds of Adverbs?
3) Define kinds of verbs?
4) Define abstract noun?
5) Define kinds of adjectives?
6) What is meant by masculine Gender?
7) Desktop
8) Explain windows explorer
9) Question tags
10) Conjunction
11) Explain any five options for the format 'menu'
12) What is RAM?
13) Define Vowel
14) Define Control unit?
15) Define keyboard?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Explain few sentences using "shall, will"?
2) Define usage of interjection
3) Write any two types of job application?
4) Write any two kind of official letters
5) Windows 98
6) Curve Tool
7) Define HTML
8) What are the advantages and disadvantages of non- verbal communication?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) Write a letter to your father asking permission join the N.C.C?
2) Explain the MS word and its applications
3) Introduction to Pagemaker? Explain
4) Describe the relevance of computerization in hospital field
5) Write a letter to your friend inviting her to spend a few days with you during the summer vocation?

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EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FIRST YEAR) EXAMINATION NOVEMBER-2025

EEE001-02 GENERAL ENGINEERING

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) India’s largest thermal power station is located at _____
2) Descrine about Experiment _____ Fletcher's Trolley
3) A _____ is a device that converts electrical energy into mechanical energy.
4) The _____ is a measure of a material's ability to resist deformation under stress.
5) A _____ is a machine that can lift heavy objects by using a system of pulleys and ropes.
6) In electrical engineering, the _____ is a device that can store electrical energy in a magnetic field.
7) A _____ is a machine that can convert electrical energy into mechanical energy to perform work.
8) The _____ is a measure of a material's ability to conduct electricity.
9) In engineering, _____ is the process of optimizing a product or system to make it more efficient and cost-effective.
10) The process of using chemical reactions to generate electricity is called _____.
11) The _____ is a measure of a material's ability to absorb energy without breaking.
12) In engineering, _____ is the process of designing and implementing software systems.
13) A _____ is a device that can measure the intensity and direction of a magnetic field.
14) The process of designing and creating electronic circuits is called _____.
15) A _____ is a machine that can generate electricity from the energy of moving water.

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) Define Resolution of Forces
2) Define Curvature
3) Define Notation for Forces
4) Define Average
5) Define Relative Velocity
6) Define Newton's Third Law of Motion
7) What is the SI unit for pressure?
8) What is the definition of a strain gauge?
9) What is the definition of an accelerometer?
10) What is the difference between AC and DC current?
11) What is the definition of an inductor?
12) What is the definition of a reciprocating pump?
13) What is the difference between a heat engine and a heat pump?
14) What is the SI unit for specific heat capacity?
15) What is the definition of a four-stroke engine?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Explain the working principle of Transformer.
2) Explain the working of a moving iron type instruments.
3) Equilibrium of Concurrent Forces
4) Experimental Justification of the "Polygon of Forces"
5) Equilibrium
6) Describe the difference between heat and temperature?
7) Discuss the principles of refrigeration and describe the different types of refrigeration systems used in engineering?
8) Discuss the principles of combustion ?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) Explain the method of temperature control in open loop and closed loop systems.
2) Describe the different types of actuators used in engineering, their advantages and disadvantages, and typical applications?
3) Discuss the principles of signal processing and describe the different techniques used in engineering?
4) Discuss the principles of industrial safety and the different measures used to ensure safety in engineering processes?
5) Explain the principles of environmental engineering and the different techniques used to mitigate environmental impact in engineering processes?

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EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FIRST YEAR) EXAMINATION NOVEMBER-2025

EEE001-03 ELECTRICAL TECHNIQUES

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) _____ is used to pull out the bearing

2) In DC generators, a stationary magnetic field is produced by _____

3) _____ in any condutor is called Current

4) Battery is an _____ device

5) Soldering iron is used to _____

6) Rectifier is a device which covert Ac in to _____ DC _____

7) Coaxial cabling has a _____ at its center.

8) Using a _____ is a time saver as all the wires can be connected at the same time.

9) The application of shunt generators are very much restricted for its dropping _____

10) The armature voltage and field voltage are the _____

11) The _____ may be operating at different voltage levels but always work at the same frequency.

12) The core of a _____is either square or rectangular in size.

13) _____ is known as the transformation ratio of the transformer

14) _____ can have 3-wire, 4-wire, or 5-wire circuits

15) _____ (also called a Scott connection) is a type of circuit used to derive two-phase power from a three-phase source or vice-versa.

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) What are the magnetic substances?
2) Define Power Rating of Resistors
3) Define LDR Symbol
4) What is critical field resistance and critical speed of a d.c generator?
5) Write the expressions for core losses and remedial measures to reduce them in a dc machine?
6) Define crawling and cogging?
7) What is the difference between Moving Coil and Moving iron Instruments?
8) List the applications of a three-phase transformer?
9) Filters?
10) What is Q factor of RLC circuit? What is its significance?
11) What is an auto transformer?
12) Hysterisis Loss?
13) Grounding Bank?
14) Tertiary winding?
15) Advantages of using transformers in parallel?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Applications of DC generators
2) Define a) Power factor b) Form factor c) Step down Transformer
3) Explain Magnetization and load characteristics of DC generators?
4) Explain the Principle of operation of alternator?
5) Explain the construction and operation of an a.c. tachometer?
6) What is Guass's law for electrical field? Write all the Maxwell's equations as well being used in this?
7) What is Lorentz force in magnetic field? What is the significance of this?
8) Explain the operation of step-up and step-down transformer using diagram?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) a) Explain Kirchhoff's Law? b) What are the types of Resistors? c) What is the equivalent of 2, 3&8 ohms resistances connected in a) PARRALLEL b)SERIES
2) Find the resistance value and tolerance of a resistor with the following color bands a)Brown, Black, Red and Gold b)Yellow, Green, and green c)Red, Yellow, Black, Black and silver
3) With the neat sketch, of circuit diagram and graph, explain open-circuit characteristics of DC shunt generator?
4) With neat diagrams, explain the principle of operation of DC servo motor?
5) Classify AC motors and explain them briefly?

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EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FIRST YEAR) EXAMINATION NOVEMBER-2025

EEE001-04 ELECTRONICS TECHNIQUES

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) In an inverter's the load is resonate to the output frequency then we get _____
2) For finding the distance of the object is by _____
3) _____ instrument which indicates the moving directions of ships and rockets
4) The circuit of pulsating de signal to steady de signal is called _____
5) _____ circuit is used to decrease the loss of SCR operating in high frequency
6) Unit of capacitance is _____
7) _____ is a device converting AC in to DC
8) Modulation is required to match the signal to the _____
9) Baseband - refers to the lower portion of the over-all _____
10) Horizontal amplifier amplifies the saw tooth waveform coming from _____. It contains phase inverter circuit also.
11) _____ are easier to read and adjust to a proper range required for the circuit or device
12) A transducer is a device that converts one form of energy to other form. It converts the measure and to a _____
13) Active Mode of Operation the phototransistor gives linear output which is proportional to the _____ that falls on its base.
14) _____ is due to large currents for which the transistor heats up (thermal effect) during its operation.
15) A transistor consists of two pn junctions formed by sandwiching either p-type or n-type semiconductor between a _____

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) Radio telemetry
2) Radio telemetry
3) What is thermal efficiency?
4) What are the Indications of a fully charged Lead Acid battery?
5) Define residual magnetism.
6) Define Q-point?
7) Semiconductors ?
8) Conductors?
9) Define doping?
10) Define Optical Diodes?
11) State relation between IE, IB& IC ?
12) State relation between a & ß and ß & ??
13) State working principle of phototransistor?
14) What is a regulator ?
15) Draw the basic block diagram of DC regulated power supply?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Aspect ratio
2) Radio telemetry
3) What are the types of Generator?
4) Explain the operation of a PNP transistor with a neat diagram.
5) Draw a LC filter circuit and explain the operation.
6) A parallel resonant circuit consists of a capacitance of 100 MFD and an inductance of 100 micro H. The series resistor is 10 Ohms.
7) Prove that the output of RC differentiator circuit is proportional to the derivative of the input?
8) With a circuit diagram write the working principle of UJT relaxation oscillator?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) What are the leading particulars of aDG set? How is the polarity test to be carried out in a battery? Explain Discharge rate of battery?
2) Draw the frequency response of transformer coupled amplifier and explain the reason for its narrow band width. Also list its applications?
3) Explain the working of transistorized bi stable multi vibrato circuit with suitable diagrams?
4) Different types of Emission- Explain?
5) Discuss Intrinsic & Extrinsic Semiconductor?

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TWO YEARS (FINAL YEAR) EXAMINATION NOVEMBER-2025

EEE001-09 WIRING SYSTEMS & ELECTRICAL MACHINES

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) What is the frequency of a alternator, if P = number of poles and N = revolution made per second?
2) Which type of single phase induction motor is having the highest power factor at full load?
3) 1 KW = _____ W
4) Current is same in _____ circuit
5) After disconnecting the terminals, _____ the clamps securing the battery in place and slowly lift it out of the battery tray.
6) The battery sends current to the starter when the operator turns the _____ to start.
7) The rectifier assembly, also known as a _____, consists of six diodes used to convert stator ac output into dc current
8) Switch the instrument to _____ and set the range button as appropriate based on the circuit's anticipated resistance
9) An _____ is a device that produces an alternating current (AC) from a direct current (DC) supply.
10) The _____ is the unit of electrical current.
11) An _____ is a device that measures the amount of electrical energy stored in a capacitor.
12) An _____ is a device that converts mechanical energy into electrical energy.
13) A _____ is a device that protects an electrical circuit from excessive current flow.
14) A _____ is a device that controls the flow of electrical current in a circuit.
15) The _____ is the part of an electrical machine that rotates to generate mechanical energy.

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) List the various types of synchronous reluctance motor.
2) Distinguish between axial and radial air gap rotors.
3) Define reluctance torque.
4) Define reluctance.
5) What is synchronous reactance?
6) Define Wire terminal ends
7) What is the difference between a motor and a generator?
8) What is the function of a transformer in an electrical system?
9) What is the difference between a contactor and a relay?
10) What is an electrical junction box?
11) What is the purpose of a capacitor in an AC motor?
12) What is a BLDC (brushless DC) motor used for?
13) What is the difference between a motor and an actuator?
14) What is a step-up converter used for?
15) What is a battery charger used for?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Discuss the use of Hall sensors for position sensing in PMBLDC motor.
2) Derive an expression for permeance coefficient for PMBLDC motor.
3) Draw the diagram of a dry cell?
4) Explain the different types of electrical cables and their uses?
5) What are the safety precautions that need to be taken when working with electrical wiring?
6) Explain the differences between a single-pole and a double-pole switch?
7) What is a power supply and how is it used in an electrical system?
8) Explain the different types of electrical connectors and their uses?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) What are the types of energy and explain?
2) Explain the differences between a synchronous motor and an asynchronous motor. What are the advantages and disadvantages of each?
3) Explain the purpose and operation of a circuit breaker. How is it installed and maintained?
4) What is a neutral wire and how is it used in an electrical system? What is the difference between a neutral and a ground wire?
5) What is a programmable logic controller (PLC) and how is it used in an automated system? What are the advantages and disadvantages of using a PLC?

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EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FINAL YEAR) EXAMINATION NOVEMBER-2025

EEE001-10 TV & COMPUTER SERVICING

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) 10000 Watt = _____ KW

2) A TV consumes _____ A

3) A induction oven, has electric current going through a coil, which produces a _____

4) One of the most common issues with TVs is _____.

5) A _____ can help improve the performance of a slow computer.

6) If your computer is experiencing frequent crashes, it might be an issue with the _____.

7) _____ can cause color problems on a TV.

8) _____ can cause a TV to randomly turn off and on.

9) A _____ can be used to clean the inside of a computer.

10) A _____ can be used to restore a computer to its factory settings.

11) If your TV is not producing any sound, the problem might be with the _____.

12) A _____ can help protect your computer from viruses and other types of malware.

13) If your TV is displaying a distorted image, it might be a problem with the _____.

14) A _____ can be used to clean the air vents on a computer.

15) If your computer is not recognizing a printer, you should check the _____.

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) What are the types of memory in electronics?
2) What is the use of ESD gloves?
3) Write the units resistance and capacitance?
4) What is LED?
5) What is a stabilizer?
6) Define the Repair Maintenance and Serving
7) Define the Basic Principle LED TV
8) Define the Energy Consumption of Both Appliances
9) What is the purpose of a TV tuner?
10) What is the main component responsible for processing data in a computer?
11) What is the purpose of a TV's T-con board?
12) What is the purpose of a TV remote control?
13) What is the difference between a smart TV and a regular TV?
14) How can you fix a TV that has a color cast or tint issue?
15) How can you check if a computer's power button is faulty?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Write brief answer about Pixel density
2) Explain Future network concepts of LED
3) Explain the steps you would take to troubleshoot a TV that is not getting power?
4) Explain how to remove malware and viruses from a computer system?
5) Explain how to troubleshoot and fix a computer that is not recognizing a connected printer?
6) Explain how to diagnose and fix a computer that is not connecting to the internet?
7) Describe the process for replacing a laptop touchpad that is not working properly?
8) Describe the process for upgrading a desktop computer's CPU?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) Describe VCD-DVD Player and Home Theatre System
2) Explain with diagram and its operation Induction Stove and Microwave Oven
3) Explain how to diagnose and fix a computer that is not booting up properly?
4) Explain how to diagnose and fix a computer that is not recognizing any connected USB devices?
5) Explain how to diagnose and fix a computer that is not producing any sound?

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EEE001-BSS DIPLOMA IN ELECTRICAL & ELECTRONICS TECHNOLOGY

TWO YEARS (FINAL YEAR) EXAMINATION NOVEMBER-2025

EEE001-11 ADVANCED ELECTRICAL & ELECTRONICS PRODUCTS

TIME: 3 Hours **Marks: 100**

INSTRUCTIONS

* 43 questions are there in total
* Write answers to each question in proportion to the mark allotted
* During the first 15 minutes read the questions carefully

I. FILL IN THE BLANKS - ANSWER FOR ANY 10 QUESTIONS **1 x 10 = 10**

1) Induction machine is sometimes used as a generator. It is also called _____
2) Rectifiers are implemented using _____ that conditionally conduct current in one direction only, like diodes.
3) The rotor in the single-phase induction motor is of _____
4) The electrical power factor of single phase induction motors is low as compared to _____
5) A permanent magnet motor is a type of electric motor that uses _____ in addition to windings on its field, rather than windings only.
6) A _____ is a circuit element that allows current to flow in only one direction.
7) The _____ is a measure of the electrical potential difference between two points in a circuit.
8) A _____ is a circuit element that stores energy in a magnetic field.
9) A _____ is a device that is used to measure the electrical potential difference between two points in a circuit.
10) A _____ is a device that is used to amplify or attenuate signals based on their amplitude.
11) A _____ is a device that is used to control the speed of an electric motor.
12) The _____ is a measure of the time it takes for a signal to change from one logic level to another.
13) The _____ is a measure of the amount of electrical charge that flows through a circuit element per unit time.
14) A _____ is a device that is used to measure the electrical power delivered to a load.
15) A _____ is a device that is used to regulate the voltage or current in a circuit using feedback control.

II. DEFINE THE FOLLOWING - ANSWER FOR ANY 10 QUESTIONS **2 x 10 = 20**

1) What are Comparison between Single Phase and Three Phase Induction Motors?
2) What are three main types of stepper motors?
3) Why Single Phase Induction Motor is not Self Starting?
4) Define Compensation winding and interpole winding Arrangements in AC series Motors?
5) Define Power Factor Correction (PFC)?
6) What are the Capacitor-Run And Shaded Pole Motors?
7) Define Futuristic electronic materials?
8) What is the principle of operation of an AC motor?
9) How does a transistor work?
10) What is an amplifier and how does it work?
11) What is the function of a fuse in an electrical circuit?
12) What is a Schottky diode and how does it work?
13) What is the principle of operation of a piezoelectric transducer?
14) What is the function of a voltage multiplier circuit?
15) What is a Hall-effect sensor and how does it work?

III. WRITE BRIEF ANSWER FOR ANY 5 QUESTIONS **5 x 5 = 25**

1) Construction of Single Phase Induction Motor?
2) Explain Stepper motor system?
3) How is a right type of material selected for specific applications in (a) high 30 Advanced Electrical and Electronics Materials temperature, (b) high voltage, and (c) high frequency situations.
4) Explain the principle and operation of a Schottky diode and its applications?
5) Describe the function and operation of a notch filter and its applications in signal processing?
6) Discuss the principle and operation of a quadrature encoder and its applications in motion control?
7) Explain the working of a switched-capacitor circuit and its applications in signal processing?
8) Describe the design and operation of a switched-mode power amplifier (PA) and its applications?

IV. WRITE LONG ANSWER FOR ANY 3 QUESTIONS **15 x 3 = 45**

1) Explain about Permanent Magnet Machines?
2) Discuss the importance of materials in development of electrical machines; electronic devices, components and instruments?
3) Classify the electrical engineering materials on the basis of their energy gaps and briefly explain each of them?
4) Discuss the working principle and applications of a microcontroller?
5) Discuss the design and operation of a resonant converter for high-frequency power conversion?