

SET-“Y” (Total No. of printed pages : 25)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025
UIET (ELECTRICAL ENGINEERING)

Code

A

Sr. No. **10009**

Time : 1½ Hours

Total Questions : 100

Max. Marks : 100

Roll No. _____ (in figure) _____ (in words)

Name : _____ Date of Birth : _____

Father's Name : _____ Mother's Name : _____

Date of Examination : _____

(Signature of the candidate)

(Signature of the Invigilator)

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3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
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Question No	Questions
1.	Fundamental research is primarily aimed at : (1) Developing new technology for immediate application (2) Exploring theoretical foundations without direct commercial intent (3) Solving specific industrial problems (4) Conducting market feasibility studies
2.	In academic research, plagiarism primarily violates which ethical principle? (1) Beneficence (2) Integrity and intellectual honesty (3) Non-maleficence (4) Confidentiality
3.	A researcher studies the impact of social media on students' academic performance by conducting interviews and thematic coding. This represents which research approach? (1) Quantitative descriptive (2) Experimental (3) Meta-analytic (4) Qualitative phenomenological
4.	What is the key characteristic of the scientific method in research? (1) Dependence on intuition (2) Anecdotal evidence (3) Logical reasoning and empirical validation (4) Pure theoretical speculation

Question No.	Questions
5.	The most appropriate first step in selecting a research topic is to : (1) Search for research funding (2) Identify a gap through literature review (3) Collect preliminary data (4) Decide on the methodology
6.	A researcher publishes identical results in two journals without disclosure. This is an example of : (1) Redundant publication (2) Paraphrasing (3) Selective reporting (4) Fabrication
7.	The purpose of a research design is to : (1) Arrange the references alphabetically (2) Outline the logical structure for data collection and analysis (3) Provide raw data summaries (4) Ensure the report format is consistent
8.	In questionnaire design, "double-barreled questions" should be avoided because : (1) They involve two issues in a single item and confuse respondents (2) They are too short to provide adequate data (3) They ensure high response rates (4) They maintain objectivity
9.	Which of the following is not a primary data collection method? (1) Observation (2) Questionnaire (3) Literature review (4) Interview

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Question No	Questions
10.	An in-depth interview technique is most appropriate when : (1) A large sample needs to be surveyed quickly (2) The study focuses on participants' perceptions and experiences (3) Respondents prefer anonymity (4) Quantitative comparison is required
11.	Which measure of central tendency is most affected by extreme values? (1) Mean (2) Median (3) Mode (4) Range
12.	During thesis writing, a bibliography differs from a reference list because : (1) It includes only cited works (2) It includes both cited and consulted works (3) It excludes books (4) It contains only web sources
13.	A researcher adopts mixed methods combining survey data and interviews. This approach is used primarily to : (1) Minimize data redundancy (2) Avoid statistical computation (3) Replace quantitative analysis (4) Validate findings through triangulation

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14.	The scope of research in interdisciplinary studies means : (1) Restricting inquiry to a single discipline (2) Incorporating theories and methods from multiple fields (3) Using only qualitative data (4) Avoiding literature review
15.	In the research process, the formulation of hypotheses occurs : (1) Before literature review (2) After data collection (3) After reviewing existing theories and gaps (4) After statistical testing
16.	In a well-structured research report, the abstract should : (1) Discuss all details of the results (2) Provide a concise summary of objectives, methods, and findings (3) Contain only keywords (4) Focus on references used
17.	An empirical study primarily depends on : (1) Logical reasoning alone (2) Direct observation or experimentation (3) Secondary sources (4) Archival data only
18.	A good research problem must be : (1) Broad and undefined (2) Based purely on intuition (3) Feasible, researchable, and significant (4) Free from literature support

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19.	Which of the following best ensures research reliability? (1) Clear hypotheses (2) Inclusion of multiple variables (3) Consistency in measurement procedures (4) Novel topic selection
20.	The concept of informed consent ensures that participants : (1) Are randomly selected (2) Receive financial incentives (3) Understand the study and agree voluntarily (4) Are anonymous
21.	In observational research, the Hawthorne effect refers to : (1) Respondents falsifying data intentionally (2) Participants altering behavior when observed (3) Interviewer's bias in recording responses (4) Data loss during analysis
22.	Secondary data is advantageous mainly because it : (1) Is always more accurate (2) Eliminates bias entirely (3) Requires no ethical approval (4) Saves time and cost for preliminary insights
23.	The most critical feature of a good hypothesis is : (1) Non-testability (2) Vagueness (3) Testability and falsifiability (4) Lack of prediction

Question No.	Questions
24.	While writing a research paper, paraphrasing must always be accompanied by : (1) New data (2) Source citation (3) Footnotes only (4) Statistical validation
25.	The literature review primarily helps a researcher to : (1) Skip the background section (2) Prove the hypothesis before data collection (3) Identify gaps and justify the new study (4) Avoid referencing
26.	The scope of research in engineering disciplines often emphasizes : (1) Application of fundamental principles to solve technical problems (2) Historical review of theories only (3) Social observation (4) Political implications
27.	A sampling frame is defined as : (1) The total population of the world (2) A complete list of units from which a sample is drawn (3) The process of selecting random variables (4) An algorithm for data analysis
28.	Which of the following ensures validity of a research tool? (1) Using complex questions (2) Simple statistical computation (3) High response rate (4) The tool measures exactly what it is intended to measure

Question No.	Questions
29.	In research ethics, fabrication refers to : (1) Copying data from others (2) Using another's ideas with citation (3) Making up data or results (4) Modifying tables
30.	A well-designed questionnaire should include : (1) Leading questions to guide responses (2) Jargon and technical bias (3) Repetitive statements (4) Logical sequence and clear wording
31.	An appropriate software for statistical data analysis and graphical representation is : (1) MS Paint (2) SPSS or R (3) WordPad (4) VLC Media Player
32.	In quantitative research, ANOVA is used to : (1) Compare variances across multiple groups (2) Analyze qualitative responses (3) Compute median values (4) Summarize textual data
33.	Which measure best describes data skewness? (1) Mean deviation (2) Standard error (3) Kurtosis (4) Skewness coefficient

Question No	Questions
34.	Data entry errors can be minimized by : (1) Repeated manual entry (2) Using data validation tools during coding (3) Avoiding software use (4) Ignoring outliers
35.	When writing a research paper, the "IMRAD" structure stands for : (1) Introduction, Methodology, Results and Discussion (2) Introduction, Model, Results and Data (3) Issue, Method, Report and Data (4) Inquiry, Measurement, Result, and Development
36.	In the binary system, the base value is : (1) 2 (2) 8 (3) 10 (4) 16
37.	The hexadecimal number system uses digits up to : (1) 8 (2) 9 (3) F (15 in decimal) (4) E (14 in decimal)
38.	Converting binary 1010 to decimal gives : (1) 8 (2) 9 (3) 10 (4) 12

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Question No	Questions
39.	The process of referencing in research ensures : (1) Reduction of originality (2) Traceability of information sources (3) Elimination of peer review (4) Avoidance of data collection
40.	The final chapter of a thesis generally focuses on : (1) Data collection tools (2) Literature survey (3) Abstract writing (4) Results interpretation and future scope
41.	A conceptual framework in research is developed to : (1) Show the visual or theoretical relationship among variables (2) Replace data analysis (3) Reduce hypothesis complexity (4) Avoid graphical representation
42.	The best way to ensure objectivity in research reporting is to : (1) Use personal opinions (2) Include emotional interpretation (3) Rely on verifiable data and established methodology (4) Avoid referencing past studies
43.	Which type of sampling provides equal chance for every element to be selected? (1) Purposive sampling (2) Random sampling (3) Snowball sampling (4) Quota sampling

Question No	Questions
44.	A pilot study is useful for : (1) Testing tools and refining methodology before main research (2) Collecting full-scale data (3) Final report submission (4) Publishing findings
45.	The credibility of qualitative data can be enhanced through : (1) Prolonged engagement and triangulation (2) Statistical modeling (3) Limiting participant interaction (4) Reducing sample size
46.	The process of converting raw data into meaningful interpretation is called : (1) Data coding and analysis (2) Data transcription only (3) Data entry (4) Report binding
47.	When publishing in reputed journals, peer review serves to : (1) Delay publication (2) Validate research quality and originality (3) Eliminate author rights (4) Ensure open access only

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Question No.	Questions
48.	The main advantage of using computers in data analysis is : (1) Human bias elimination and computational accuracy (2) Inability to handle large data (3) Costly manual effort (4) Reduced data visualization
49.	In referencing style, "et al." denotes : (1) The title of the article (2) The editor's name (3) A journal abbreviation (4) Additional co-authors beyond the first
50.	While writing a book or article, footnotes are primarily used to : (1) Add unrelated commentary (2) Provide source details or additional explanation (3) Replace bibliography (4) Expand the word count
51.	The total charge entering a terminal between $t = 1$ sec and $t = 2$ sec if the current passing the terminal $i = (3t^2 - t)A$ is ____. (1) $\frac{11}{2}C$ (2) $\frac{13}{2}C$ (3) $\frac{7}{2}C$ (4) $\frac{9}{2}C$

Question No.	Questions
52.	_____ nodes are there in a network having 12 branches and 8 independent loops. (1) 17 (2) 12 (3) 7 (4) 5
53.	The current through a branch in a linear network is 2 A when the input source voltage is 10 V. If the voltage is reduced to 1 V and the polarity is reversed, what will be the current through the same branch? (1) -20 A (2) -2 A (3) -1 A (4) -0.2 A
54.	At the terminal to which the load is connected, the Thevenin's resistance and Thevenin's voltage are 10 Ω and 40 V, respectively. What is the maximum power that can be supplied to the load? (1) 160 w (2) 120 W (3) 80 W (4) 40 W

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Question No	Questions
55.	Energy stored in a 10 mH inductor when the current through it increases from zero to 2 A is ____. (1) 10 J (2) 0.2 J (3) 0.04 J (4) 0.02 J
56.	A series-connected load draws a current $i(t) = 4 \cos(100\pi t + 10^\circ)A$ when the applied voltage is $v(t) = 120 \cos(100\pi - 20^\circ)V$. The apparent power and the power factor of the circuit, respectively are : (1) 240 VA, 0.866 leading (2) 240 VA, 0.866 leading (3) 480 VA, 0.866 leading (4) 480 VA, 0.866 leading
57.	A three-phase star-connected load takes 1.8 kW at a power factor of 0.5 from a 230 V, 60 Hz supply. The resistance and inductance of each phase of the load, respectively are : (1) 7.35 Ω, 25.6 mH (2) 7.35 Ω, 33.8 mH (3) 7.35 Ω, 45.6 mH (4) 7.35 Ω, 52.2 mH

Question No.	Questions
58.	Which three-phase connection can be used in a transformer to introduce a phase difference of 30° between its output and corresponding input line voltages? (1) Delta-zigzag (2) Star-star (3) Delta-delta (4) Star-delta
59.	A rotating electrical machine having its self-inductances of both the stator and the rotor windings, independent of the rotor position will be definitely not developed : (1) Starting torque (2) Synchronizing torque (3) Hysteresis torque (4) Reluctance torque
60.	A synchronous generator is supplying a zero-power factor (lagging) load at rated current. What is the nature of the armature reaction? (1) Ineffective (2) Demagnetizing (3) Cross-magnetizing (4) Magnetizing
61.	The DC motor, which can provide zero speed regulation at full load without any controller, is _____. (1) Differential compound (2) Cumulative compound (3) Shunt (4) Series

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Question No.	Questions
62.	A 2 pole, 50 Hz, 11 kV, 100 MW alternator has an inertia constant is 4s. The approximate value of moment of inertia in (kg.m²) is? (1) 8070 (2) 8090 (3) 8110 (4) 8130
63.	If the base kVA is 25,000, then a 5000 kVA alternator with 8% reactance will have_____ (per-unit or percentage reactance on the new base). (1) 20% reactance (2) 30% reactance (3) 40% reactance (4) 50% reactance
64.	When a synchronous motor is running at synchronous speed, the damper winding produces : (1) Damping torque (2) Eddy current torque (3) Torques aiding the developed to torque (4) No torque
65.	If the iron core of a transformer is replaced by an air core, then the hysteresis losses in the transformer will : (1) increase (2) decrease (3) remain unchanged (4) become zero

Question No.	Questions
66.	Convolution of $x(t + 5)$ with impulse function $\delta(t - 7)$ is equal to : (1) $x(t + 2)$ (2) $x(t - 2)$ (3) $x(t + 12)$ (4) $x(t - 12)$
67.	In the state-equation of a discrete-time system (assume zero input), an equilibrium point is one for which _____, where $x(k)$ is the state vector. (1) $x(k) = 0$ (2) $x(k + 1) = 0$ (3) Both (1) and (2) (4) $x(k + 1) = x(k)$
68.	A linear system is described by the state-space model $\dot{x}(t) = -x(t) + 2u(t)$, $y(t) = 0.5x(t) + u(t)$. The transfer function $\frac{y(s)}{u(s)}$ of the system is _____. (1) $(s + 2)/(s + 1)$ (2) $1/(s + 1)$ (3) $(s + 1)/(s + 2)$ (4) $1/(s + 2)$
69.	Consider a continuous-time system with input, $x(t)$ and output, $y(t)$ given by $y(t) = x(t) \cos(t)$. This system is : (1) Linear, time-variant (2) Linear, time-invariant (3) Nonlinear, time-invariant (4) Nonlinear, time-variant

Question No.	Questions
70.	Poles of second-order models with the same damping ratio will lie : (1) On the real axis (2) On imaginary axis (3) On a radial line from origin (4) None of these options
71.	In force-voltage analogy, the analogy for the displacement is : (1) Current (2) Charge (3) Resistance (4) Flux linkage
72.	Consider the loop transfer function $\frac{K(s+2)(s+6)}{(s+1)(s+3)(s+5)}$, the centroid of the root locus will be located at : (1) 4 (2) -1 (3) -2 (4) -3
73.	In an ideal op-amp, the voltage gain of the common-mode signal is ____. (1) 0 (2) 1 (3) infinity (4) depends on the input

Question No.	Questions
74.	When the damping ratio lies between 0 and 1, the system is said to be ____. (1) Undamped (2) Underdamped (3) Critically Damped (4) Overdamped
75.	The ratio of maximum demand on generating station to the installed capacity of plant gives : (1) Load factor (2) Operating factor (3) Utilization factor (4) Capacity factor
76.	Which of the following transmission lines can be classified as a short transmission line? (1) length up to 600 km (2) length up to 500 km (3) length up to 200 km (4) length up to 80 km
77.	Which of the following reaches full-load operation the fastest when starting from a cold state? (1) Gas turbine plant (2) Nuclear power plant (3) Hydro power plant (4) Thermal power plant

Question No.	Questions
78.	In a load flow problem solved by Newton-Raphson method with polar coordinates, the size of the Jacobian matrix is 100×100. If there are 20 PV buses in addition to PQ buses and a slack bus, the total number of buses in the system is : (1) 59 (2) 60 (3) 61 (4) 71
79.	In thermal power plants, the pressure in the working fluid cycle is developed by : (1) Feed water pump (2) Condenser (3) Super-heater (4) Turbine
80.	A power system is supplied by three generating units rated at 150 MW, 200 MW and 250 MW, respectively. What is the maximum load that can be securely connected to this system if the simultaneous outage of two generating units is not considered to be a credible event? (1) 150 MW (2) 250 MW (3) 350 MW (4) 400 MW

Questions

Question No.	Questions
81.	A generating station has a maximum demand of 30 MW, average demand of 18 MW, and a plant capacity of 50%. The reserve capacity of the plant is : (1) 5MW (2) 6MW (3) 10 MW (4) 12 MW
82.	The sequence components of the fault current are as follows : $I_{positive} = j 1.5 p.u.$, $I_{negative} = -j 0.5 p.u.$, $I_{zero} = -j1 p.u.$ The type of fault in the system is : (1) LG (2) LL (3) LLLG (4) LLG
83.	Which among the following quantities are to be determined in voltage-controlled buses? (1) Q and δ (2) Q and V (3) V and δ (4) P and Q
84.	If we increase the spacing between the phase conductors, the line capacitance : (1) Increases (2) Decreases (3) Remains unaffected (4) None of the options

Question No.	Questions
85.	Impedance relay can be used for _____ protection. (1) overcurrent (2) differential (3) distance (4) overvoltage
86.	The Ferranti effect causes which of the following at the receiving end of a transmission line? (1) Voltage drop (2) Voltage rise (3) Power loss (4) Power factor improvement
87.	A 40 kVA transformer has a core loss of 400 W and a full-load copper loss of 800 W. The proportion of full load at maximum efficiency is : (1) 50% (2) 62.3% (3) 70.7% (4) 85%
88.	Horizontally mounted moving iron instruments use _____ damping. (1) Air friction (2) Eddy current (3) Fluid friction (4) Electromagnetic damping

Question No.	Questions
89.	Sphere gaps are used for measurement of : (1) Instantaneous voltage (2) R.M.S. voltage (3) Peak voltage (4) Average voltage
90.	The effective resistance of an iron-cored choke working on ordinary supply frequency is more than its true resistance because of _____. (1) iron loss in core (2) skin effect (3) increase in temperature (4) capacitive effect between adjacent coil turns
91.	The input resistance of a cathode ray oscilloscope is of the order of : (1) Tens of ohms (2) Mega ohms (3) Kilo ohms (4) Fraction of an ohm
92.	A three-phase diode bridge rectifier is fed from a 400 V RMS, 50 Hz, three-phase AC source. If the load is purely resistive, then peak instantaneous output voltage is equal to : (1) $400\sqrt{2}$ V (2) 400 V (3) $400 \sqrt{\frac{2}{3}}$ V (4) $\frac{400}{\sqrt{3}}$ V

Question No.	Questions
93.	As In an ideal dc-dc buck converter, the ratio of peak-peak inductor current ripple to peak-peak output voltage ripple is 20. If switching frequency is 10 kHz, then the output capacitor value will be : (1) 250 μF (2) 350 μF (3) 500 μF (4) 1 mF
94.	In dc-dc buck converter, the PI controller helps in : (1) Reducing settling time (2) Increasing crossover frequency (3) Eliminating steady-state error (4) None of the options
95.	The Conduction loss versus device current characteristic of a power MOSFET is best approximated by : (1) Parabola (2) Straight line (3) Rectangular Hyperbola (4) Exponentially decaying function
96.	SCR is considered to be a semi-controlled device because : (1) It can be turned OFF but not ON with a gate pulse (2) It conducts only during one half cycle of an alternating current wave (3) It can be turned ON but not OFF with a gate pulse (4) It can be turned ON only during one half cycle of an alternating voltage wave

Question No.	Questions
97.	The output voltage waveform of a three-phase square wave inverter contains _____ harmonics : (1) only triple (2) even & odd (3) only even (4) only odd
98.	What will be the ratio of the C.T. on the H.V side of a 3-phase star/delta, 33/11 kV transformer if the protecting CT on the LV side has a ratio of 300 : 5? (1) 100 : $5/\sqrt{3}$ (2) 200 : $5/\sqrt{3}$ (3) 150 : $4/\sqrt{3}$ (4) 120 : $6/\sqrt{3}$
99.	A system is called a non-anticipatory system if its current output depends on : (1) Current input only (2) Past input only (3) Current input and past input (4) Future input
100.	In a gate turn off thyristor, turning off is achieved by : (1) Latching current at gate (2) Holding current at gate (3) Positive current at gate (4) Negative current at gate

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Roll No. _____ (in figure) _____ (in words)

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2.	Consider the loop transfer function $\frac{K(s+2)(s+6)}{(s+1)(s+3)(s+5)}$, the centroid of the root locus will be located at : (1) 4 (2) -1 (3) -2 (4) -3
3.	In an ideal op-amp, the voltage gain of the common-mode signal is ____. (1) 0 (2) 1 (3) infinity (4) depends on the input
4.	When the damping ratio lies between 0 and 1, the system is said to be _____. (1) Undamped (2) Underdamped (3) Critically Damped (4) Overdamped

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11.	The total charge entering a terminal between $t = 1$ sec and $t = 2$ sec if the current passing the terminal $i = (3t^2 - t)A$ is _____. (1) $\frac{11}{2}c$ (2) $\frac{13}{2}c$ (3) $\frac{7}{2}c$ (4) $\frac{9}{2}c$
12.	_____ nodes are there in a network having 12 branches and 8 independent loops. (1) 17 (2) 12 (3) 7 (4) 5

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13.	The current through a branch in a linear network is 2 A when the input source voltage is 10 V. If the voltage is reduced to 1 V and the polarity is reversed, what will be the current through the same branch? (1) -20 A (2) -2 A (3) -1 A (4) -0.2 A
14.	At the terminal to which the load is connected, the Thevenin's resistance and Thevenin's voltage are $10\ \Omega$ and 40 V, respectively. What is the maximum power that can be supplied to the load? (1) 160 w (2) 120 W (3) 80 W (4) 40 W
15.	Energy stored in a 10 mH inductor when the current through it increases from zero to 2 A is _____. (1) 10 J (2) 0.2 J (3) 0.04 J (4) 0.02 J

Question No.	Questions
16.	A series-connected load draws a current $i(t) = 4 \cos(100\pi t + 10^\circ)A$ when the applied voltage is $v(t) = 120 \cos(100\pi - 20^\circ)V$. The apparent power and the power factor of the circuit, respectively are : (1) 240 VA, 0.866 leading (2) 240 VA, 0.866 leading (3) 480 VA, 0.866 leading (4) 480 VA, 0.866 leading
17.	A three-phase star-connected load takes 1.8 kW at a power factor of 0.5 from a 230 V, 60 Hz supply. The resistance and inductance of each phase of the load, respectively are : (1) 7.35 Ω, 25.6 mH (2) 7.35 Ω, 33.8 mH (3) 7.35 Ω, 45.6 mH (4) 7.35 Ω, 52.2 mH
18.	Which three-phase connection can be used in a transformer to introduce a phase difference of 30° between its output and corresponding input line voltages? (1) Delta-zigzag (2) Star-star (3) Delta-delta (4) Star-delta

Question No.	Questions
19.	A rotating electrical machine having its self-inductances of both the stator and the rotor windings, independent of the rotor position will be definitely not developed : (1) Starting torque (2) Synchronizing torque (3) Hysteresis torque (4) Reluctance torque
20.	A synchronous generator is supplying a zero-power factor (lagging) load at rated current. What is the nature of the armature reaction? (1) Ineffective (2) Demagnetizing (3) Cross-magnetizing (4) Magnetizing
21.	An appropriate software for statistical data analysis and graphical representation is : (1) MS Paint (2) SPSS or R (3) WordPad (4) VLC Media Player
22.	In quantitative research, ANOVA is used to : (1) Compare variances across multiple groups (2) Analyze qualitative responses (3) Compute median values (4) Summarize textual data

Question No.	Questions
23.	Which measure best describes data skewness? (1) Mean deviation (2) Standard error (3) Kurtosis (4) Skewness coefficient
24.	Data entry errors can be minimized by : (1) Repeated manual entry (2) Using data validation tools during coding (3) Avoiding software use (4) Ignoring outliers
25.	When writing a research paper, the "IMRAD" structure stands for : (1) Introduction, Methodology, Results and Discussion (2) Introduction, Model, Results and Data (3) Issue, Method, Report and Data (4) Inquiry, Measurement, Result, and Development
26.	In the binary system, the base value is : (1) 2 (2) 8 (3) 10 (4) 16
27.	The hexadecimal number system uses digits up to : (1) 8 (2) 9 (3) F (15 in decimal) (4) E (14 in decimal)

Question No.	Questions
28.	Converting binary 1010 to decimal gives : (1) 8 (2) 9 (3) 10 (4) 12
29.	The process of referencing in research ensures : (1) Reduction of originality (2) Traceability of information sources (3) Elimination of peer review (4) Avoidance of data collection
30.	The final chapter of a thesis generally focuses on : (1) Data collection tools (2) Literature survey (3) Abstract writing (4) Results interpretation and future scope
31.	Which measure of central tendency is most affected by extreme values? (1) Mean (2) Median (3) Mode (4) Range
32.	During thesis writing, a bibliography differs from a reference list because : (1) It includes only cited works (2) It includes both cited and consulted works (3) It excludes books (4) It contains only web sources

Question No.	Questions
33.	A researcher adopts mixed methods combining survey data and interviews. This approach is used primarily to : (1) Minimize data redundancy (2) Avoid statistical computation (3) Replace quantitative analysis (4) Validate findings through triangulation
34.	The scope of research in interdisciplinary studies means : (1) Restricting inquiry to a single discipline (2) Incorporating theories and methods from multiple fields (3) Using only qualitative data (4) Avoiding literature review
35.	In the research process, the formulation of hypotheses occurs : (1) Before literature review (2) After data collection (3) After reviewing existing theories and gaps (4) After statistical testing
36.	In a well-structured research report, the abstract should : (1) Discuss all details of the results (2) Provide a concise summary of objectives, methods, and findings (3) Contain only keywords (4) Focus on references used

Question No.	Questions
37.	An empirical study primarily depends on : (1) Logical reasoning alone (2) Direct observation or experimentation (3) Secondary sources (4) Archival data only
38.	A good research problem must be : (1) Broad and undefined (2) Based purely on intuition (3) Feasible, researchable, and significant (4) Free from literature support
39.	Which of the following best ensures research reliability? (1) Clear hypotheses (2) Inclusion of multiple variables (3) Consistency in measurement procedures (4) Novel topic selection
40.	The concept of informed consent ensures that participants : (1) Are randomly selected (2) Receive financial incentives (3) Understand the study and agree voluntarily (4) Are anonymous
41.	The input resistance of a cathode ray oscilloscope is of the order of : (1) Tens of ohms (2) Mega ohms (3) Kilo ohms (4) Fraction of an ohm

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43.	As In an ideal dc-dc buck converter, the ratio of peak-peak inductor current ripple to peak-peak output voltage ripple is 20. If switching frequency is 10 kHz, then the output capacitor value will be : (1) 250 μF (2) 350 μF (3) 500 μF (4) 1 mF
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47.	The output voltage waveform of a three-phase square wave inverter contains _____ harmonics : (1) only triple (2) even & odd (3) only even (4) only odd
48.	What will be the ratio of the C.T. on the H.V side of a 3-phase star/delta, 33/11 kV transformer if the protecting CT on the LV side has a ratio of 300 : 5? (1) $100 : 5/\sqrt{3}$ (2) $200 : 5/\sqrt{3}$ (3) $150 : 4/\sqrt{3}$ (4) $120 : 6/\sqrt{3}$
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52.	A 2 pole, 50 Hz, 11 kV, 100 MW alternator has an inertia constant is 4s. The approximate value of moment of inertia in (kg.m²) is? (1) 8070 (2) 8090 (3) 8110 (4) 8130
53.	If the base kVA is 25,000, then a 5000 kVA alternator with 8% reactance will have _____ (per-unit or percentage reactance on the new base). (1) 20% reactance (2) 30% reactance (3) 40% reactance (4) 50% reactance

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54.	When a synchronous motor is running at synchronous speed, the damper winding produces : (1) Damping torque (2) Eddy current torque (3) Torques aiding the developed to torque (4) No torque
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59.	Consider a continuous-time system with input, $x(t)$ and output, $y(t)$ given by $y(t) = x(t) \cos(t)$. This system is : (1) Linear, time-variant (2) Linear, time-invariant (3) Nonlinear, time-invariant (4) Nonlinear, time-variant
60.	Poles of second-order models with the same damping ration will lie : (1) On the real axis (2) On imaginary axis (3) On a radial line from origin (4) None of these options
61.	A generating station has a maximum demand of 30 MW, average demand of 18 MW, and a plant capacity of 50%. The reserve capacity of the plant is : (1) 5 MW (2) 6 MW (3) 10 MW (4) 12 MW

Question No	Questions
62.	The sequence components of the fault current are as follows : $I_{positive} = j 1.5 p.u.$, $I_{negative} = -j 0.5 p.u.$, $I_{zero} = -j 1 p.u.$ The type of fault in the system is : (1) LG (2) LL (3) LLLG (4) LLG
63.	Which among the following quantities are to be determined in voltage-controlled buses? (1) Q and δ (2) Q and V (3) V and δ (4) P and Q
64.	If we increase the spacing between the phase conductors, the line capacitance : (1) Increases (2) Decreases (3) Remains unaffected (4) None of the options
65.	Impedance relay can be used for _____ protection. (1) overcurrent (2) differential (3) distance (4) overvoltage

SET-Y
Code-B

Question No.	Questions
66.	The Ferranti effect causes which of the following at the receiving end of a transmission line? (1) Voltage drop (2) Voltage rise (3) Power loss (4) Power factor improvement
67.	A 40 kVA transformer has a core loss of 400 W and a full-load copper loss of 800 W. The proportion of full load at maximum efficiency is : (1) 50% (2) 62.3% (3) 70.7% (4) 85%
68.	Horizontally mounted moving iron instruments use _____ damping. (1) Air friction (2) Eddy current (3) Fluid friction (4) Electromagnetic damping
69.	Sphere gaps are used for measurement of : (1) Instantaneous voltage (2) R.M.S. voltage (3) Peak voltage (4) Average voltage

Question No.	Questions
70.	The effective resistance of an iron-cored choke working on ordinary supply frequency is more than its true resistance because of ____. (1) iron loss in core (2) skin effect (3) increase in temperature (4) capacitive effect between adjacent coil turns
71.	A conceptual framework in research is developed to : (1) Show the visual or theoretical relationship among variables (2) Replace data analysis (3) Reduce hypothesis complexity (4) Avoid graphical representation
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73.	Which type of sampling provides equal chance for every element to be selected? (1) Purposive sampling (2) Random sampling (3) Snowball sampling (4) Quota sampling

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76.	The process of converting raw data into meaningful interpretation is called : (1) Data coding and analysis (2) Data transcription only (3) Data entry (4) Report binding
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78.	The main advantage of using computers in data analysis is : (1) Human bias elimination and computational accuracy (2) Inability to handle large data (3) Costly manual effort (4) Reduced data visualization
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90.	A well-designed questionnaire should include : (1) Leading questions to guide responses (2) Jargon and technical bias (3) Repetitive statements (4) Logical sequence and clear wording
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92.	In academic research, plagiarism primarily violates which ethical principle? (1) Beneficence (2) Integrity and intellectual honesty (3) Non-maleficence (4) Confidentiality

SET-Y
Code-B

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93.	A researcher studies the impact of social media on students' academic performance by conducting interviews and thematic coding. This represents which research approach? (1) Quantitative descriptive (2) Experimental (3) Meta-analytic (4) Qualitative phenomenological
94.	What is the key characteristic of the scientific method in research? (1) Dependence on intuition (2) Anecdotal evidence (3) Logical reasoning and empirical validation (4) Pure theoretical speculation
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SET-“Y” (Total No. of printed pages : 25)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025
UIET (ELECTRICAL ENGINEERING)

Sr. No. **10007**

Code **C**

Time : 1½ Hours

Total Questions : 100

Max. Marks : 100

Roll No. _____ (in figure) _____ (in words)

Name : _____

Date of Birth : _____

Father's Name : _____

Mother's Name : _____

Date of Examination : _____

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. All questions are compulsory.
2. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
5. The candidate MUST NOT do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let.
6. There will be negative marking and a deduction of 0.25 marks for each wrong answers. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
7. Use only Black or Blue **BALL POINT PEN** of good quality in the OMR Answer-Sheet.
8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.



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60.	The final chapter of a thesis generally focuses on : (1) Data collection tools (2) Literature survey (3) Abstract writing (4) Results interpretation and future scope
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63.	In an ideal op-amp, the voltage gain of the common-mode signal is ____. (1) 0 (2) 1 (3) infinity (4) depends on the input

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Question No.	Questions
71.	A generating station has a maximum demand of 30 MW, average demand of 18 MW, and a plant capacity of 50%. The reserve capacity of the plant is : (1) 5MW (2) 6MW (3) 10 MW (4) 12 MW
72.	The sequence components of the fault current are as follows : $I_{positive} = j 1.5 \text{ p.u.}$, $I_{negative} = -j 0.5 \text{ p.u.}$, $I_{zero} = -j1 \text{ p.u.}$ The type of fault in the system is : (1) LG (2) LL (3) LLLG (4) LLG
73.	Which among the following quantities are to be determined in voltage-controlled buses? (1) Q and δ (2) Q and V (3) V and δ (4) P and Q
74.	If we increase the spacing between the phase conductors, the line capacitance : (1) Increases (2) Decreases (3) Remains unaffected (4) None of the options

Question No.	Questions
75.	Impedance relay can be used for _____ protection. (1) overcurrent (2) differential (3) distance (4) overvoltage
76.	The Ferranti effect causes which of the following at the receiving end of a transmission line? (1) Voltage drop (2) Voltage rise (3) Power loss (4) Power factor improvement
77.	A 40 kVA transformer has a core loss of 400 W and a full-load copper loss of 800 W. The proportion of full load at maximum efficiency is : (1) 50% (2) 62.3% (3) 70.7% (4) 85%
78.	Horizontally mounted moving iron instruments use _____ damping. (1) Air friction (2) Eddy current (3) Fluid friction (4) Electromagnetic damping

Question No	Questions
79.	Sphere gaps are used for measurement of : (1) Instantaneous voltage (2) R.M.S. voltage (3) Peak voltage (4) Average voltage
80.	The effective resistance of an iron-cored choke working on ordinary supply frequency is more than its true resistance because of _____. (1) iron loss in core (2) skin effect (3) increase in temperature (4) capacitive effect between adjacent coil turns
81.	Which measure of central tendency is most affected by extreme values? (1) Mean (2) Median (3) Mode (4) Range
82.	During thesis writing, a bibliography differs from a reference list because : (1) It includes only cited works (2) It includes both cited and consulted works (3) It excludes books (4) It contains only web sources

Question No.	Questions
83.	A researcher adopts mixed methods combining survey data and interviews. This approach is used primarily to : (1) Minimize data redundancy (2) Avoid statistical computation (3) Replace quantitative analysis (4) Validate findings through triangulation
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88.	A good research problem must be : (1) Broad and undefined (2) Based purely on intuition (3) Feasible, researchable, and significant (4) Free from literature support
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91.	The total charge entering a terminal between $t = 1$ sec and $t = 2$ sec if the current passing the terminal $i = (3t^2 - t)A$ is _____. (1) $\frac{11}{2}C$ (3) $\frac{7}{2}C$ (2) $\frac{13}{2}C$ (4) $\frac{9}{2}C$

Question No.	Questions
92.	_____ nodes are there in a network having 12 branches and independent loops. (1) 17 (2) 12 (3) 7 (4) 5
93.	The current through a branch in a linear network is 2 A when the input source voltage is 10 V. If the voltage is reduced to 1 V and the polarity is reversed, what will be the current through the same branch? (1) -20 A (2) -2 A (3) -1 A (4) -0.2 A
94.	At the terminal to which the load is connected, the Thevenin's resistance and Thevenin's voltage are $10\ \Omega$ and 40 V, respectively. What is the maximum power that can be supplied to the load? (1) 160 w (2) 120 W (3) 80 W (4) 40 W

Question No.	Questions
95.	Energy stored in a 10 mH inductor when the current through it increases from zero to 2 A is_____. (1) 10 J (2) 0.2 J (3) 0.04 J (4) 0.02 J
96.	A series-connected load draws a current $i(t) = 4 \cos(100\pi t + 10^\circ)A$ when the applied voltage is $v(t) = 120 \cos(100\pi - 20^\circ)V$. The apparent power and the power factor of the circuit, respectively are : (1) 240 VA, 0.866 leading (2) 240 VA, 0.866 leading (3) 480 VA, 0.866 leading (4) 480 VA, 0.866 leading
97.	A three-phase star-connected load takes 1.8 kW at a power factor of 0.5 from a 230 V, 60 Hz supply. The resistance and inductance of each phase of the load, respectively are : (1) 7.35 Ω, 25.6 mH (2) 7.35 Ω, 33.8 mH (3) 7.35 Ω, 45.6 mH (4) 7.35 Ω, 52.2 mH

Question No.	Questions
98.	Which three-phase connection can be used in a transformer to introduce a phase difference of 30° between its output and corresponding input line voltages? (1) Delta-zigzag (2) Star-star (3) Delta-delta (4) Star-delta
99.	A rotating electrical machine having its self-inductances of both the stator and the rotor windings, independent of the rotor position will be definitely not developed : (1) Starting torque (2) Synchronizing torque (3) Hysteresis torque (4) Reluctance torque
100.	A synchronous generator is supplying a zero-power factor (lagging) load at rated current. What is the nature of the armature reaction? (1) Ineffective (2) Demagnetizing (3) Cross-magnetizing (4) Magnetizing

SET-“Y” (Total No. of printed pages : 25)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025
UIET (ELECTRICAL ENGINEERING)

Code

D

Sr. No. **10008**

Time : 1½ Hours

Total Questions : 100

Max. Marks : 100

Roll No. _____ (in figure) _____ (in words)

Name : _____

Date of Birth : _____

Father's Name : _____

Mother's Name : _____

Date of Examination : _____

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. All questions are compulsory.
2. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
5. The candidate **MUST NOT** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers **MUST NOT** be ticked in the Question book-let.
6. There will be negative marking and a deduction of 0.25 marks for each wrong answers. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
7. Use only Black or Blue **BALL POINT PEN** of good quality in the OMR Answer-Sheet.
8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.



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10.	The concept of informed consent ensures that participants : (1) Are randomly selected (2) Receive financial incentives (3) Understand the study and agree voluntarily (4) Are anonymous
11.	The input resistance of a cathode ray oscilloscope is of the order of : (1) Tens of ohms (2) Mega ohms (3) Kilo ohms (4) Fraction of an ohm
12.	A three-phase diode bridge rectifier is fed from a 400 V RMS, 50 Hz, three-phase AC source. If the load is purely resistive, then peak instantaneous output voltage is equal to : (1) $400\sqrt{2}$ V (2) 400 V (3) $400\sqrt{\frac{2}{3}}$ V (4) $\frac{400}{\sqrt{3}}$ V
13.	As In an ideal dc-dc buck converter, the ratio of peak-peak inductor current ripple to peak-peak output voltage ripple is 20. If switching frequency is 10 kHz, then the output capacitor value will be : (1) 250 μ F (2) 350 μ F (3) 500 μ F (4) 1 mF

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14.	In dc-dc buck converter, the PI controller helps in : (1) Reducing settling time (2) Increasing crossover frequency (3) Eliminating steady-state error (4) None of the options
15.	The Conduction loss versus device current characteristic of a power MOSFET is best approximated by : (1) Parabola (2) Straight line (3) Rectangular Hyperbola (4) Exponentially decaying function
16.	SCR is considered to be a semi-controlled device because : (1) It can be turned OFF but not ON with a gate pulse (2) It conducts only during one half cycle of an alternating current wave (3) It can be turned ON but not OFF with a gate pulse (4) It can be turned ON only during one half cycle of an alternating voltage wave
17.	The output voltage waveform of a three-phase square wave inverter contains _____ harmonics : (1) only triple (2) even & odd (3) only even (4) only odd

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18.	What will be the ratio of the C.T. on the H.V side of a 3-phase star/delta, 33/11 kV transformer if the protecting CT on the LV side has a ratio of 300 : 5? (1) $100 : 5/\sqrt{3}$ (2) $200 : 5/\sqrt{3}$ (3) $150 : 4/\sqrt{3}$ (4) $120 : 6/\sqrt{3}$
19.	A system is called a non-anticipatory system if its current output depends on : (1) Current input only (2) Past input only (3) Current input and past input (4) Future input
20.	In a gate turn off thyristor, turning off is achieved by : (1) Latching current at gate (2) Holding current at gate (3) Positive current at gate (4) Negative current at gate
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52.	Secondary data is advantageous mainly because it : (1) Is always more accurate (2) Eliminates bias entirely (3) Requires no ethical approval (4) Saves time and cost for preliminary insights
53.	The most critical feature of a good hypothesis is : (1) Non-testability (2) Vagueness (3) Testability and falsifiability (4) Lack of prediction
54.	While writing a research paper, paraphrasing must always be accompanied by : (1) New data (2) Source citation (3) Footnotes only (4) Statistical validation

Question No	Questions
55.	The literature review primarily helps a researcher to : (1) Skip the background section (2) Prove the hypothesis before data collection (3) Identify gaps and justify the new study (4) Avoid referencing
56.	The scope of research in engineering disciplines often emphasizes : (1) Application of fundamental principles to solve technical problems (2) Historical review of theories only (3) Social observation (4) Political implications
57.	A sampling frame is defined as : (1) The total population of the world (2) A complete list of units from which a sample is drawn (3) The process of selecting random variables (4) An algorithm for data analysis
58.	Which of the following ensures validity of a research tool? (1) Using complex questions (2) Simple statistical computation (3) High response rate (4) The tool measures exactly what it is intended to measure
59.	In research ethics, fabrication refers to : (1) Copying data from others (2) Using another's ideas with citation (3) Making up data or results (4) Modifying tables

Question No	Questions
60.	A well-designed questionnaire should include : (1) Leading questions to guide responses (2) Jargon and technical bias (3) Repetitive statements (4) Logical sequence and clear wording
61.	A conceptual framework in research is developed to : (1) Show the visual or theoretical relationship among variables (2) Replace data analysis (3) Reduce hypothesis complexity (4) Avoid graphical representation
62.	The best way to ensure objectivity in research reporting is to : (1) Use personal opinions (2) Include emotional interpretation (3) Rely on verifiable data and established methodology (4) Avoid referencing past studies
63.	Which type of sampling provides equal chance for every element to be selected? (1) Purposive sampling (2) Random sampling (3) Snowball sampling (4) Quota sampling
64.	A pilot study is useful for : (1) Testing tools and refining methodology before main research (2) Collecting full-scale data (3) Final report submission (4) Publishing findings

Question No.	Questions
65.	The credibility of qualitative data can be enhanced through : (1) Prolonged engagement and triangulation (2) Statistical modeling (3) Limiting participant interaction (4) Reducing sample size
66.	The process of converting raw data into meaningful interpretation is called : (1) Data coding and analysis (2) Data transcription only (3) Data entry (4) Report binding
67.	When publishing in reputed journals, peer review serves to : (1) Delay publication (2) Validate research quality and originality (3) Eliminate author rights (4) Ensure open access only
68.	The main advantage of using computers in data analysis is : (1) Human bias elimination and computational accuracy (2) Inability to handle large data (3) Costly manual effort (4) Reduced data visualization

Question No.	Questions
69.	In referencing style, "et al." denotes : (1) The title of the article (2) The editor's name (3) A journal abbreviation (4) Additional co-authors beyond the first
70.	While writing a book or article, footnotes are primarily used to : (1) Add unrelated commentary (2) Provide source details or additional explanation (3) Replace bibliography (4) Expand the word count
71.	The DC motor, which can provide zero speed regulation at full load without any controller, is _____. (1) Differential compound (2) Cumulative compound (3) Shunt (4) Series
72.	A 2 pole, 50 Hz, 11 kV, 100 MW alternator has an inertia constant is 4s. The approximate value of moment of inertia in (kg.m²) is? (1) 8070 (2) 8090 (3) 8110 (4) 8130

Questions

Question No.	Questions
73.	If the base kVA is 25,000, then a 5000 kVA alternator with 8% reactance will have _____ (per-unit or percentage reactance on the new base). (1) 20% reactance (2) 30% reactance (3) 40% reactance (4) 50% reactance
74.	When a synchronous motor is running at synchronous speed, the damper winding produces : (1) Damping torque (2) Eddy current torque (3) Torques aiding the developed to torque (4) No torque
75.	If the iron core of a transformer is replaced by an air core, then the hysteresis losses in the transformer will : (1) increase (2) decrease (3) remain unchanged (4) become zero
76.	Convolution of $x(t + 5)$ with impulse function $\delta(t - 7)$ is equal to : (1) $x(t + 2)$ (2) $x(t - 2)$ (3) $x(t + 12)$ (4) $x(t - 12)$

Question No.	Questions
77.	In the state-equation of a discrete-time system (assume zero input), an equilibrium point is one for which _____, where $x(k)$ is the state vector. (1) $x(k) = 0$ (2) $x(k+1) = 0$ (3) Both (1) and (2) (4) $x(k+1) = x(k)$
78.	A linear system is described by the state-space model $\dot{x}(t) = -x(t) + 2u(t)$, $y(t) = 0.5x(t) + u(t)$. The transfer function $\frac{y(s)}{u(s)}$ of the system is _____. (1) $(s+2)/(s+1)$ (2) $1/(s+1)$ (3) $(s+1)/(s+2)$ (4) $1/(s+2)$
79.	Consider a continuous-time system with input, $x(t)$ and output, $y(t)$ given by $y(t) = x(t) \cos(t)$. This system is : (1) Linear, time-variant (2) Linear, time-invariant (3) Nonlinear, time-invariant (4) Nonlinear, time-variant
80.	Poles of second-order models with the same damping ratio will lie : (1) On the real axis (2) On imaginary axis (3) On a radial line from origin (4) None of these options

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81.	Fundamental research is primarily aimed at : (1) Developing new technology for immediate application (2) Exploring theoretical foundations without direct commercial intent (3) Solving specific industrial problems (4) Conducting market feasibility studies
82.	In academic research, plagiarism primarily violates which ethical principle? (1) Beneficence (2) Integrity and intellectual honesty (3) Non-maleficence (4) Confidentiality
83.	A researcher studies the impact of social media on students' academic performance by conducting interviews and thematic coding. This represents which research approach? (1) Quantitative descriptive (2) Experimental (3) Meta-analytic (4) Qualitative phenomenological
84.	What is the key characteristic of the scientific method in research? (1) Dependence on intuition (2) Anecdotal evidence (3) Logical reasoning and empirical validation (4) Pure theoretical speculation

Question No.	Questions
85.	The most appropriate first step in selecting a research topic is to : (1) Search for research funding (2) Identify a gap through literature review (3) Collect preliminary data (4) Decide on the methodology
86.	A researcher publishes identical results in two journals without disclosure. This is an example of : (1) Redundant publication (2) Paraphrasing (3) Selective reporting (4) Fabrication
87.	The purpose of a research design is to : (1) Arrange the references alphabetically (2) Outline the logical structure for data collection and analysis (3) Provide raw data summaries (4) Ensure the report format is consistent
88.	In questionnaire design, "double-barreled questions" should be avoided because : (1) They involve two issues in a single item and confuse respondents (2) They are too short to provide adequate data (3) They ensure high response rates (4) They maintain objectivity
89.	Which of the following is not a primary data collection method? (1) Observation (2) Questionnaire (3) Literature review (4) Interview

Question No.	Questions
90.	An in-depth interview technique is most appropriate when : (1) A large sample needs to be surveyed quickly (2) The study focuses on participants' perceptions and experiences (3) Respondents prefer anonymity (4) Quantitative comparison is required
91.	A generating station has a maximum demand of 30 MW, average demand of 18 MW, and a plant capacity of 50%. The reserve capacity of the plant is : (1) 5MW (2) 6MW (3) 10 MW (4) 12 MW
92.	The sequence components of the fault current are as follows : $I_{positive} = j 1.5 \text{ p.u.}$, $I_{negative} = -j 0.5 \text{ p.u.}$, $I_{zero} = -j1 \text{ p.u.}$ The type of fault in the system is : (1) LG (2) LL (3) LLLG (4) LLG
93.	Which among the following quantities are to be determined in voltage controlled buses? (1) Q and δ (2) Q and V (3) V and δ (4) P and Q

Question No.	Questions
94.	If we increase the spacing between the phase conductors, the line capacitance : (1) Increases (2) Decreases (3) Remains unaffected (4) None of the options
95.	Impedance relay can be used for _____ protection. (1) overcurrent (2) differential (3) distance (4) overvoltage
96.	The Ferranti effect causes which of the following at the receiving end of a transmission line? (1) Voltage drop (2) Voltage rise (3) Power loss (4) Power factor improvement
97.	A 40 kVA transformer has a core loss of 400 W and a full-load copper loss of 800 W. The proportion of full load at maximum efficiency is : (1) 50% (2) 62.3% (3) 70.7% (4) 85%

Question No.	Questions
98.	Horizontally mounted moving iron instruments use _____ damping. (1) Air friction (2) Eddy current (3) Fluid friction (4) Electromagnetic damping
99.	Sphere gaps are used for measurement of : (1) Instantaneous voltage (2) R.M.S. voltage (3) Peak voltage (4) Average voltage
100.	The effective resistance of an iron-cored choke working on ordinary supply frequency is more than its true resistance because of _____. (1) iron loss in core (2) skin effect (3) increase in temperature (4) capacitive effect between adjacent coil turns

PH.D.EE-2025 Answer Keys				
Q.NO	Set A	Set B	Set C	Set D
1	2	2	1	1
2	2	2	3	2
3	4	1	2	4
4	3	2	1	2
5	2	3	1	3
6	1	4	1	2
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48	1	1	1	3
49	4	3	1	2
50	2	4	3	4


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	A	B	C	D
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52	4	2	1	4
53	4	3	4	3
54	4	4	2	2
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96	3	1	1	2
97	4	2	2	3
98	1	1	4	1
99	3	3	4	3
100	4	2	2	1


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