

# CII – iPATE 1.0 (2020)

Computer Based PAN India Examination

Category: GRADUATE ENGINEER (ENTRY LEVEL)

Engineering Discipline: ELECTRICAL ENGINEERING

Questions & Answers

(Reviewed, Revised & Published dtd. 20.01.2021)

## Paper Structure

Question Nos.	Sections & Topics		Marks
1 to 20	Section I : Cognitive Abilities	<ul style="list-style-type: none"><li>Quantitative Aptitude</li><li>Analytical Reasoning</li><li>Data Interpretation</li><li>English Communication</li></ul>	20
21 to 40	Section II : Professional Abilities	<ul style="list-style-type: none"><li>Project Management</li><li>Health, Safety &amp; Risk Management</li><li>Environmental Laws</li><li>Social Responsibility &amp; Ethics</li><li>Finance &amp; Accounts</li><li>Legal, Contracts &amp; Arbitration</li></ul>	20
41 to 50	Section III (A) : Technical Abilities	Physics & Chemistry (10+2 level)	10
51 to 100	Section III (B) : Technical Abilities	Engineering Discipline	50
<b>TOTAL</b>			<b>100</b>

NOTE:

- Exam Duration: 3 Hours
- Total 100 no. of Questions of 1 Mark each with Negative Marking of ½ Mark for every wrong answer
- Questions (Section wise) and respective Answer Options shuffled at Candidates' terminal

Question No. 1	X, Y and Z are three participants in a kilometer race. If X can give Y a start of 40m and X can give Z a start of 64m, how many metres start can Y give Z?			
Answer Options	A)	B)	C)	D)
	20 mtr	15 mtr	25 mtr	10 mtr
Right Answer	C			

Question No. 2	Two places A and B are 125km apart. Ram started from A to B and Raj from B to A at the same time. They met at a point 75km from A. Find the ratio of speeds of Ram & Raj.			
Answer Options	A)	B)	C)	D)
	3:2	2:3	1:3	3:4
Right Answer	A			

Question No. 3	The length of a circular track is 800 m. Virat and Amresh started from the same point on the track and ran in opposite directions. Virat took 12 minutes to cover one kilometer while Amresh took only 9 minutes to cover the same distance. They kept running for 90 minutes. How many times did they cross each other?			
Answer Options	A)	B)	C)	D)
	10	20	21	30
Right Answer	C			

Question No. 4	The marks scored by Prasoon Joshi in three subjects are in the ratio 4 : 5 : 6. Prasoon Joshi scored an overall aggregate of 60% in the exam. If the maximum marks in each subject are the same, in how many subjects did Prasoon Joshi score more than 70% marks?			
Answer Options	A)	B)	C)	D)
	One	Two	Three	Zero
Right Answer	A			

Question No. 5	Meena scores 40% in an examination and after review, even though her score is increased by 50%, she fails by 35 marks. If her post-review score is increased by 20%, she will have 7 marks more than the passing score. The percentage score needed for passing the examination is			
Answer Options	A)	B)	C)	D)
	75	80	60	70
Right Answer	D			

Question No. 6	Fill up the following series: 100, 50, 52, 26, 28, _____			
Answer Options	A)	B)	C)	D)
	30	32	14	16
Right Answer	C			

Question No. 7	<p><b>The question is followed by three statements I, II, and III. Read the question and the statements carefully and choose your answer according to which set of the statement(s) is/are sufficient to answer the question.</b></p> <p>What is the present age of Rakesh?</p> <p>I. The ratio of the ages of Ramesh and Rakesh, three years ago, was 4 : 5.</p> <p>II. The ratio of the ages of Rajesh and Rakesh, after two years, will be 4 : 5.</p> <p>III. Two years ago the ratio of the ages of Rajesh and Ramesh was 12 : 13.</p>			
Answer Options	A)	B)	C)	D)
	I and II only	II and III only	I and III only	All I, II and III
Right Answer	D			

Question No. 8	<p><b>The question below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer:</b></p> <p>In a kilometre race, by how many meters Chandu beats Chand?</p> <p>Statement I : In a kilometer race, Chandu beats Chandan by 100 meters.</p> <p>Statement II : The respective ratio of the speed of Chandan and Chand is 4 : 3.</p> <p>Statement III : In a kilometer race, Chandan beats Chand by 150 meters.</p>			
Answer Options	A)	B)	C)	D)
	Either statement III alone or statements I and II together are sufficient	Only statement III is sufficient	Only statement I and II are sufficient	Only statement I, II, and III are sufficient
Right Answer	C			

Question No. 9	<p>In the following question, there is a certain relationship between two given words on one side of :: and one word is given on another side of :: while another word is to be found from the given alternatives having the same relationship with this word as the words of the given pair bear. Choose the correct alternative.</p> <p>particular : fussy :: _____ : subservient</p>			
Answer Options	A)	B)	C)	D)
	meek	above	cranky	uptight
Right Answer	A			

Question No. 10	<p>Pinky, who is Victor's daughter, say to Lucy, "Your Mother Rosy is the younger sister of my Father, who is the third child of Joseph." How is Joseph related to Lucy?</p>			
Answer Options	A)	B)	C)	D)
	Father - In - Law	Father	Maternal Uncle	Grand Father
Right Answer	D			

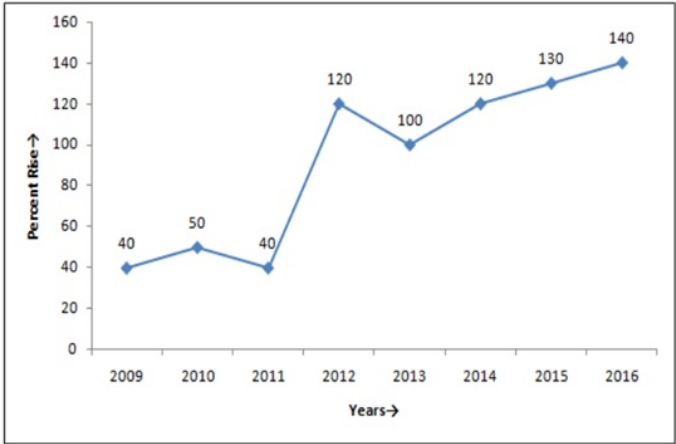
Question No. 11	Attracted by the serenity of the evening, a friend and I lately went to one of the public walks near the city. Here we (1) _____ together for some time. Then my friend, stopping suddenly, (2) _____ by the elbow, and led me out of the public walk. I could perceive by the quickness of this (3) _____, and by his frequently looking behind, that he was attempting to avoid somebody who followed.			
Answer Options	A)	B)	C)	D)
	(1)sauntered, (2)trapped, (3)pace	(1)vamoosed, (2)relinquished, (3)hands	(1)dance, (2)caught, (3) gallop	(1)sauntered, (2)caught, (3)gallop
Right Answer	D			

Question No. 12	It was not surprising that my own countrymen should treat me so, for I had gained a (1) _____ of notoriety and popularity among them. Even for Englishmen I was individual and not merely one of the (2) _____ and, I imagine the fact that I had received my education in England, brought me (3) _____			
Answer Options	A)	B)	C)	D)
	(1) weight (2) collection (3) in juxtaposition with them	(1) ration (2) mass (3) nearer to them	(1) measure (2) dispersal (3) at a remote position	(1) measure (2) mass (3) nearer to them
Right Answer	D			

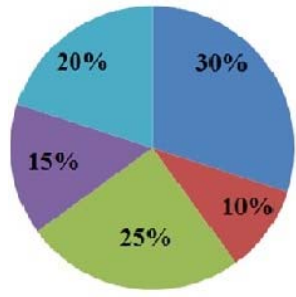
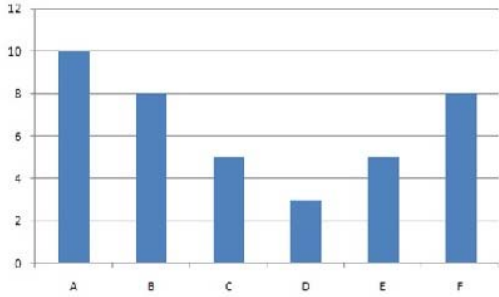
Question No. 13	<b>Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.</b>  A: A man on a bike had to ride on the pavement. B: When he tried to plunge onto the road, a car hit him. C: As the bus inched through the evening life, the traffic grew. D: There was no space on the road any more.			
Answer Options	A)	B)	C)	D)
	CBAD	DBCA	ADBC	CDAB
Right Answer	D			

Question No. 14	Select the Antonym of OFFHAND			
Answer Options	A)	B)	C)	D)
	accurate	universal	appropriate	premeditated
Right Answer	D			

Question No. 15	What is the synonym of SEIZE			
Answer Options	A)	B)	C)	D)
	Start	Release	Length	Grasp
Right Answer	D			

<p>Question No. 16</p>	<p>The Line graph given below shows the percent rise in population from 2009 to 2016.</p> <p>For how many years the percent rise was more than 100%</p> 			
<p>Answer Options</p>	<p>A) 4</p>	<p>B) 3</p>	<p>C) 2</p>	<p>D) 5</p>
<p>Right Answer</p>	<p>A</p>			

<p>Question No. 17</p>	<p>The following table gives the percentage of marks obtained by seven students in in six different subjects in an examination. What are the average marks obtained by all the seven students in Physics? (rounded off to two digit after decimal)</p> <p style="text-align: center;"><b>The Numbers in the Brackets give the Maximum Marks in Each Subject.</b></p> <table border="1" data-bbox="370 1163 1206 1503"> <thead> <tr> <th rowspan="3">Student</th> <th colspan="6">Subject (Max. Marks)</th> </tr> <tr> <th>Maths</th> <th>Chemistry</th> <th>Physics</th> <th>Geography</th> <th>History</th> <th>Computer Science</th> </tr> <tr> <th>(150)</th> <th>(130)</th> <th>(120)</th> <th>(100)</th> <th>(60)</th> <th>(40)</th> </tr> </thead> <tbody> <tr> <td>Ayush</td> <td>90</td> <td>50</td> <td>90</td> <td>60</td> <td>70</td> <td>80</td> </tr> <tr> <td>Aman</td> <td>100</td> <td>80</td> <td>80</td> <td>40</td> <td>80</td> <td>70</td> </tr> <tr> <td>Sajal</td> <td>90</td> <td>60</td> <td>70</td> <td>70</td> <td>90</td> <td>70</td> </tr> <tr> <td>Rohit</td> <td>80</td> <td>65</td> <td>80</td> <td>80</td> <td>60</td> <td>60</td> </tr> <tr> <td>Muskan</td> <td>80</td> <td>65</td> <td>85</td> <td>95</td> <td>50</td> <td>90</td> </tr> <tr> <td>Tanvi</td> <td>70</td> <td>75</td> <td>65</td> <td>85</td> <td>40</td> <td>60</td> </tr> <tr> <td>Tarun</td> <td>65</td> <td>35</td> <td>50</td> <td>77</td> <td>80</td> <td>80</td> </tr> </tbody> </table>				Student	Subject (Max. Marks)						Maths	Chemistry	Physics	Geography	History	Computer Science	(150)	(130)	(120)	(100)	(60)	(40)	Ayush	90	50	90	60	70	80	Aman	100	80	80	40	80	70	Sajal	90	60	70	70	90	70	Rohit	80	65	80	80	60	60	Muskan	80	65	85	95	50	90	Tanvi	70	75	65	85	40	60	Tarun	65	35	50	77	80	80
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<p>Answer Options</p>	<p>A) 58</p>	<p>B) 89.14</p>	<p>C) 74</p>	<p>D) 80</p>																																																																				
<p>Right Answer</p>	<p>B</p>																																																																							

<p>Question No. 18</p>	<p>The pie-chart shows sources of income for an NGO. The total income is Rs.40 crore. The bar chart gives the expenditure incurred on various items A – Food for poor, B – Education to illiterate, C – Mid-day deal programme, D – General Expenses, E – Eye Camp expenses, F – Integrated Street Children Programme.(in Crores)</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>What Percentage of money is saved by the NGO?</p>			
<p>Answer Options</p>	A) 0.035	B) 0.045	C) 0.025	D) 0.038
<p>Right Answer</p>	C			

<p>Question No. 19</p>	<p>Read the following information carefully and answer the following question.</p> <p>i) 'A \$ B' means 'A is mother of B';                  ii) 'A # B' means 'A is father of B';                  iii) 'A @ B' means 'A is husband of B';                  iv) 'A % B' means 'A is daughter of B'.</p> <p>P @ Q \$ M # T indicates what relationship of P with T?</p>			
<p>Answer Options</p>	A) Paternal grandmother	B) Maternal grandmother	C) Paternal grandfather	D) Maternal grandfather
<p>Right Answer</p>	C			

<p>Question No. 20</p>	<p>A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft. and slips back 2ft. How much time would it take the monkey to reach the top?</p>			
<p>Answer Options</p>	A) 21 hours	B) 12 hours	C) 18 hours	D) 15 hours
<p>Right Answer</p>	C			

<p>Question No. 21</p>	<p>Gantt Chart is commonly used for _____</p>			
<p>Answer Options</p>	A) Routing	B) Scheduling	C) Follow up	D) Inspection and quality control
<p>Right Answer</p>	B			

Question No. 22	Consider the following features/factors: (i) Projects are of non-repetitive type, (ii) Time required need not be known, (iii) Events have been established for planning, (iv) Emphasis is given to activities of project. PERT is preferred for planning because of.....			
Answer Options	A)	B)	C)	D)
	(i), (ii) and (iv)	(ii), (iii) and (iv)	(i), (iii) and (iv)	(i), (ii) and (iii)
Right Answer	A			

Question No. 23	What is the Critical Path Method (CPM)			
Answer Options	A)	B)	C)	D)
	It is an improvement upon Bar Chart method	It provides a realistic approach to daily problems	It avoids delay which is common in Bar Chart	All the options
Right Answer	D			

Question No. 24	An activity has an early start(ES) of day 3, a late start(LS) of day 13, an early finish(EF) of day 9 and a late finish(LF) of day 19. The activity ____			
Answer Options	A)	B)	C)	D)
	Is on the Critical path	Has a Lag	Progressing well	Is not on the Critical path
Right Answer	D			

Question No. 25	The following extinguisher is suitable for cotton or other textile fire			
Answer Options	A)	B)	C)	D)
	Water	Soda acid	Foam	Dry chemicals
Right Answer	D			

Question No. 26	The following class of fire occur in electrical equipment			
Answer Options	A)	B)	C)	D)
	Class-A fires	Class-B fires	Class-C fires	All of the above
Right Answer	C			

Question No. 27	Which of the following is not a chemical-related health hazard?			
Answer Options	A)	B)	C)	D)
	Carcinogenicity	Reactivity	Corrosivity	Toxicity
Right Answer	B			

Question No. 28	You should wear eye, head, and face protection if you are working with which of the following tools?			
Answer Options	A)	B)	C)	D)
	Portable abrasive wheel tools	Electric tools	Pneumatic tools	Liquid fuel tools
Right Answer	C			

Question No. 29	BOD is measure of			
Answer Options	A)	B)	C)	D)
	The amount of oxygen consumed in the biological process	The utilization of organic substances by aerobic microorganisms	Respiratory needs of biological community	None of the above
Right Answer	A			

Question No. 30	Smoke + fog is called as			
Answer Options	A)	B)	C)	D)
	Soeg	smog	Both (A) and (B)	None of the above
Right Answer	B			

Question No. 31	A Company or organization can go to ISO 14000 certificate provided it has an ongoing environmental management system in operation for at least			
Answer Options	A)	B)	C)	D)
	3 months	6 months	1 year	5 years
Right Answer	B			

Question No. 32	Which statement is true?			
Answer Options	A)	B)	C)	D)
	Walton writes that business ethics is related with truth and justice	A businessman who follows unethical conduct in business should be socially boycotted by the people	Government in the country has enacted various laws, rule and regulations under the provisions of which the business is bound to act honestly	All of the above
Right Answer	D			



Question No. 33	Which is the basic principle of ethos for management?			
Answer Options	A)	B)	C)	D)
	Co-operation is powerful instrument for team work and success in any enterprise involving collective work	Holistic approach indicating unity between the Divine, Individual Self and the Universe	Immense potential energy and talents for perfection as human being has the spirit within his heart	All of the above
Right Answer	D			

Question No. 34	The concept of international social responsibility is the expectation that MNCs concern themselves about _____ effects of their decisions regarding activities in other countries.			
Answer Options	A)	B)	C)	D)
	philosophical	competitive	environmental	social and economic
Right Answer	D			

Question No. 35	Net working Capital refers to			
Answer Options	A)	B)	C)	D)
	Current assets less current liabilities	Total assets less total liabilities	Current assets less inventories	Total current assets
Right Answer	A			

Question No. 36	Non-cash items refer to			
Answer Options	A)	B)	C)	D)
	The credit sales of a firm	The accounts payable of a firm	Expenses charged against revenues that do not directly affect cash flow	All accounts on the balance sheet other than cash on hand
Right Answer	D			

Question No. 37	The factor, which is largely considered in making or buying decisions			
Answer Options	A)	B)	C)	D)
	Quality Suppliers	Dependability of Suppliers	Production irrelevancy	Both A & B
Right Answer	D			

Question No. 38	Which of the following model law was used by the Indian Arbitration & Conciliation Act,1996			
Answer Options	A)	B)	C)	D)
	Indian Constitution	Guideline of Supreme Court	European commercial Arbitration procedure	UNICITRAL
Right Answer	D			

Question No. 39	An arbitral award made under Arbitration & Conciliation Act,1996 shall be considered as a _____			
Answer Options	A)	B)	C)	D)
	General award	International award	Domestic award	Foreign award
Right Answer	C			

Question No. 40	Which level of management is responsible for implementing programs that are intended to carry out the broader objectives of an organization set by management			
Answer Options	A)	B)	C)	D)
	Supervisory managers	Middle managers	First level managers	Financial managers
Right Answer	B			

Question No. 41	The rate at which electrical energy is used may be measured in:			
Answer Options	A)	B)	C)	D)
	watt/second	watt second	watt	kilowatt-hour
Right Answer	C			

Question No. 42	Radio waves are readily diffracted around buildings whereas light waves are negligibly diffracted around buildings. This is because radio waves:			
Answer Options	A)	B)	C)	D)
	are plane polarized	have much longer wavelengths than light waves	have much shorter wavelengths than light waves	are nearly monochromatic (single frequency)
Right Answer	B			

Question No. 43	An ideal gas expands into a vacuum in a rigid vessel. As a result there is:			
Answer Options	A)	B)	C)	D)
	a change in entropy	a change in temperature	a change in phase	an increase of pressure
Right Answer	A			

Question No. 44	A heat engine:			
Answer Options	A)	B)	C)	D)
	converts heat input to an equivalent amount of work	converts work to an equivalent amount of heat	takes heat in, does work, and loses energy as heat	uses positive work done on the system to transfer heat from a low temperature reservoir to a high temperature reservoir
Right Answer	C			

Question No. 45	The coefficient of kinetic friction:			
Answer Options	A)	B)	C)	D)
	is in the direction of the frictional force	is in the direction of the normal force	is the ratio of force to area	None of the above
Right Answer	D			

Question No. 46	Which of the following is a crystalline solid?			
Answer Options	A)	B)	C)	D)
	Tar	Butter	Glass	Common salt
Right Answer	D			

Question No. 47	Which of the following are physical changes? (i) Melting of iron metal (ii) Rusting of iron (iii) Bending of an iron rod (iv) Drawing a wire of iron metal			
Answer Options	A)	B)	C)	D)
	(i), (ii) and (iii)	(i), (ii) and (iv)	(i), (iii) and (iv)	(ii), (iii) and (iv)
Right Answer	C			

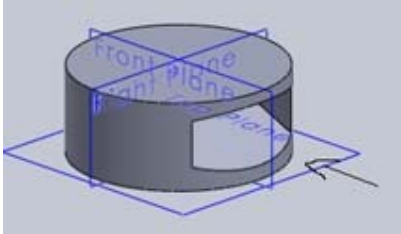
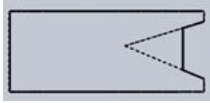

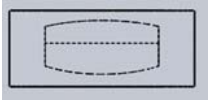
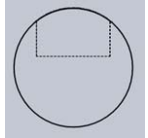
Question No. 48	The monomers of Buna-S rubber are			
Answer Options	A)	B)	C)	D)
	styrene and butadiene	isoprene and butadiene	vinyl chloride and sulphur	butadiene
Right Answer	A			

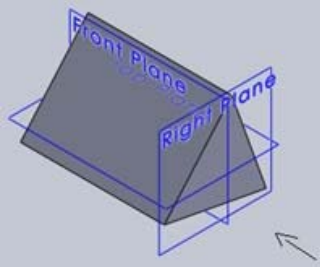
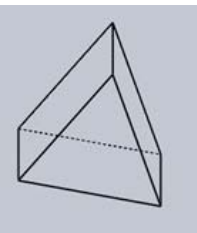
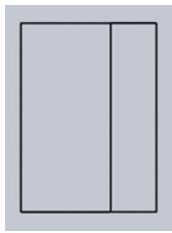
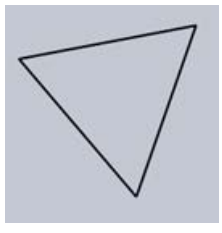
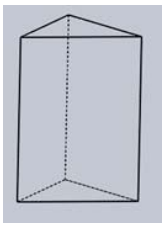
Question No. 49	Equal masses of ethane and hydrogen are mixed in any empty container at 25°C. The fraction of total pressure exerted by hydrogen is			
Answer Options	A)	B)	C)	D)
	1:2	1:1	1:16	15:16
Right Answer	D			

Question No. 50	n-propyl bromide on treating with alcoholic KOH produces			
Answer Options	A)	B)	C)	D)
	propyne	propene	propane	propanol
Right Answer	B			

Question No. 51	When a solid completely penetrates another solid, there will be two lines of intersection. These lines are called _____			
Answer Options	A)	B)	C)	D)
	line of interpenetration	concylic curves of lines	hidden lines	inside line
Right Answer	A			

Question No. 52	Drawing straight lines on both the surfaces of solids and then pointing the points where they intersect and drawing lines which forms the line of intersection this process of finding the line of intersection is termed as _____ method.			
Answer Options	A)	B)	C)	D)
	assumption	line	removing material	cutting- plane
Right Answer	B			

Question No. 53	Identify the back view for the below cylinder.			
				
Answer Options	A)	B)	C)	D)
				
Right Answer	C			

<p>Question No. 54</p>	<p>Identify the front view from the isometric view for the below-given prism.</p> 			
<p>Answer Options</p>	<p>A)</p> 	<p>B)</p> 	<p>C)</p> 	<p>D)</p> 
<p>Right Answer</p>	<p>C</p>			

<p>Question No. 55</p>	<p>The perspectives of concentric circles are not concentric _____</p>			
<p>Answer Options</p>	<p>A) circles</p>	<p>B) ellipses</p>	<p>C) spheres</p>	<p>D) ellipsoids</p>
<p>Right Answer</p>	<p>B</p>			

<p>Question No. 56</p>	<p>Three resistors, each of R ohms, are connected to form a triangle. The resistance between any two terminals will be</p>			
<p>Answer Options</p>	<p>A) <math>\frac{2}{3} R</math></p>	<p>B) <math>\frac{3}{2} R</math></p>	<p>C) R</p>	<p>D) 3R</p>
<p>Right Answer</p>	<p>A</p>			

<p>Question No. 57</p>	<p>A 100W bulb is connected in series with a room heater. If now 100W bulb is replaced by a 40w bulb, the heater output will</p>			
<p>Answer Options</p>	<p>A) increase</p>	<p>B) decrease</p>	<p>C) remain the same</p>	<p>D) None of these</p>
<p>Right Answer</p>	<p>B</p>			

Question No. 58	A wye arrangement of resistances has each resistance of 3 ohm, the equivalent delta arrangement will have each resistance of values.			
Answer Options	A)	B)	C)	D)
	9 ohm	6 ohm	3 ohm	1 ohm
Right Answer	A			

Question No. 59	Cells are connected in parallel in order to increase			
Answer Options	A)	B)	C)	D)
	life of the cells	efficiency	current capacity	voltage rating
Right Answer	C			

Question No. 60	Which one is classified as integrating instrument?			
Answer Options	A)	B)	C)	D)
	D'arsonval galvanometer	ampere-hour meter	ohm-meter	ammeter
Right Answer	B			

Question No. 61	Voltmeter should be of very high resistance so that			
Answer Options	A)	B)	C)	D)
	its range is high	Its accuracy is high	it may draw current minimum possible	its sensitivity is high
Right Answer	C			

Question No. 62	The resistance of a parallel circuit consisting of two branches is 12 ohms. If the resistance of one branch is 18 ohms, what is the resistance of the other?			
Answer Options	A)	B)	C)	D)
	18 ohms	36 ohms	48 ohms	64 ohms
Right Answer	B			

Question No. 63	Four wires of same material, the same cross-sectional area and the same length when connected in parallel give a resistance of 0.25 ohm. If the same four wires are connected in series the effective resistance will be			
Answer Options	A)	B)	C)	D)
	1 ohms	2 ohms	3 ohms	4 ohms
Right Answer	D			

Question No. 64	Which of the following materials has a negative temperature co-efficient of resistance?			
Answer Options	A)	B)	C)	D)
	Copper	Aluminium	Carbon	Brass
Right Answer	C			

Question No. 65	Insulating materials have the function of			
Answer Options	A)	B)	C)	D)
	preventing a short circuit between conducting wires	preventing an open circuit between the voltage source and the load	conducting very large currents	storing very high currents
Right Answer	A			

Question No. 66	The minimum charge on an ion is			
Answer Options	A)	B)	C)	D)
	equal to the atomic number of the atom	equal to the charge of an electron	equal to the charge of the number of electrons in an atom	zero
Right Answer	B			

Question No. 67	Heat in a conductor is produced on the passage of electric current due to			
Answer Options	A)	B)	C)	D)
	reactance	capacitance	impedance	resistance
Right Answer	D			

Question No. 68	An open resistor, when checked with an ohm-meter reads			
Answer Options	A)	B)	C)	D)
	zero	infinite	high but within tolerance	low but not zero
Right Answer	B			

Question No. 69	Voltage dependent resistors are usually made from			
Answer Options	A)	B)	C)	D)
	charcoal	copper	nichrome	graphite
Right Answer	C			

Question No. 70	The lines of force due to charged particles are			
Answer Options	A)	B)	C)	D)
	always straight	always curved	sometimes curved	none of the above
Right Answer	B			

Question No. 71	If three 15 $\mu\text{F}$ capacitors are connected in series, the net capacitance is			
Answer Options	A)	B)	C)	D)
	5 $\mu\text{F}$	30 $\mu\text{F}$	45 $\mu\text{F}$	50 $\mu\text{F}$
Right Answer	A			

Question No. 72	Which of the following is not a vector?			
Answer Options	A)	B)	C)	D)
	Linear momentum	Angular momentum	Electric field	Electric potential
Right Answer	B			

Question No. 73	When a dielectric slab is introduced in a parallel plate capacitor, the potential difference between plates will			
Answer Options	A)	B)	C)	D)
	remain uncharged	decrease	increase	become zero
Right Answer	B			

Question No. 74	When 4 volts e.m.f. is applied across a 1 farad capacitor, it will store energy of			
Answer Options	A)	B)	C)	D)
	2 joules	4 joules	6 joules	8 joules
Right Answer	D			

Question No. 75	What is the value of capacitance that must be connected in parallel with 50 pF condenser to make an equivalent capacitance of 150 pF?			
Answer Options	A)	B)	C)	D)
	50 pF	100 pF	150 pF	200 pF
Right Answer	B			



Question No. 76	Which of the following capacitors is marked for polarity?			
Answer Options	A)	B)	C)	D)
	Air	Paper	Mica	Electrolytic
Right Answer	D			

Question No. 77	When the dielectric is homogeneous, the potential gradient is			
Answer Options	A)	B)	C)	D)
	uniform	non-uniform	zero	any of the above
Right Answer	A			

Question No. 78	A single core cable used on 33000 V has conductor diameter 10 mm and the internal diameter of sheath 25 mm. The maximum electrostatic stress in the cable is			
Answer Options	A)	B)	C)	D)
	$62 \times 10^5$ V/m	$72 \times 10^5$ V/m	$82 \times 10^5$ V/m	$92 \times 10^5$ V/m
Right Answer	B			

Question No. 79	In a three-phase voltage source inverter operating in square wave mode, the output line voltage is free from			
Answer Options	A)	B)	C)	D)
	3rd harmonic	7th harmonic	11th harmonic	13th harmonic
Right Answer	A			

Question No. 80	The frequency of ripple in the output voltage of a three-phase half-controlled bridge rectifier depends on the			
Answer Options	A)	B)	C)	D)
	firing angle	load inductance	load resistance	supply frequency
Right Answer	D			

Question No. 81	In counter control of induction motor's speed, a DC link is used. This is to			
Answer Options	A)	B)	C)	D)
	provide a constant peak flux density to the gap and core saturation	provide necessary DC voltage to inverter	vary the slip	trigger the thyristors of the inverter
Right Answer	A			

Question No. 82	A switch mode power supply operating at 20kHz to 100kHz range uses at the main switching element			
Answer Options	A)	B)	C)	D)
	Thyristor	MOSFET	TRIAC	UJT
Right Answer	B			

Question No. 83	Number of comparators required in a 3 bit comparator type ADC is			
Answer Options	A)	B)	C)	D)
	2	3	7	8
Right Answer	C			

Question No. 84	For a four bit weighted register D/A converter with logic 1 as 8V and logic 0 as 0V , the third LSB will be			
Answer Options	A)	B)	C)	D)
	(1/4)	(3/16)	(3/15)	None of these
Right Answer	D			

Question No. 85	The full-scale output of a 8 bit DAC is 0 to 10V. The per cent regulation is			
Answer Options	A)	B)	C)	D)
	0.06V	0.04V	0.03V	0.02V
Right Answer	B			

Question No. 86	In binary R-2R LADDER D/A converter, the input resistance for each input is			
Answer Options	A)	B)	C)	D)
	4R	R	2R	None of these
Right Answer	D			

Question No. 87	Calculate the power factor of a load, if the meter constant of meter making 1500 revolutions is 350 rev/kw-h, when operating at 230V and 5A for 7 h.			
Answer Options	A)	B)	C)	D)
	0.6	0.5	0.8	0.532
Right Answer	D			

Question No. 88	A compensated wattmeter has its reading corrected for error due to the			
Answer Options	A)	B)	C)	D)
	frequency	friction	power consumed in current coil	power consumed in potential coil
Right Answer	D			

Question No. 89	The ratio and phase angle errors in a well-designed current transformer (CT) are kept within specified limits by using			
Answer Options	A)	B)	C)	D)
	ferrite core	strip wound core	some fractional turns	in built compensating capacitors
Right Answer	A			

Question No. 90	Q meter is used to measure			
Answer Options	A)	B)	C)	D)
	Q factor of an inductive coil	inductance, effective resistance and self-capacitance	bandwidth	all of the above
Right Answer	A			

Question No. 91	The primary current in a current transformer is directed by			
Answer Options	A)	B)	C)	D)
	the secondary burden	the core of the transformer	the load current	none of the above
Right Answer	C			

Question No. 92	The used of high-speed circuit breakers			
Answer Options	A)	B)	C)	D)
	reduce the short circuit current	improve system stability	decrease system stability	increase the short circuit current
Right Answer	B			

Question No. 93	Reactance relay is normally preferred for protection against			
Answer Options	A)	B)	C)	D)
	earth faults	phase faults	open circuit faults	None of these
Right Answer	A			

Question No. 94	Bulk power transmission over long HVDC lines are preferred, on account of			
Answer Options	A)	B)	C)	D)
	low cost of HVDC terminals	no harmonic problems	minimum line power loses	simple protection
Right Answer	C			

Question No. 95	A 4-POLE DC generator is running at 1500 rpm. The frequency of current in the armature winding will be			
Answer Options	A)	B)	C)	D)
	25 Hz	50 Hz	100 Hz	200 Hz
Right Answer	B			

Question No. 96	A 200V DC shunt motor delivers an output at 17KW with an input of 20KW. The field winding resistance is 50 ohm and armature resistance is 0.04 ohm. Maximum efficiency will be obtained when the total armature copper losses are equal to			
Answer Options	A)	B)	C)	D)
	2632 W	3000 W	3680 W	5232 W
Right Answer	A			
NOTE	Question was displayed incorrectly at candidates' terminals. Hence '1' mark has been given to all candidates, who attempted or not.			

Question No. 97	What class of CT is preferable for Differential protection?			
Answer Options	A)	B)	C)	D)
	Class 1.0	Class 5P10	Class PS	Class 0.2
Right Answer	C			

Question No. 98	Impedance base protection is normally used for			
Answer Options	A)	B)	C)	D)
	Overload Protection	HV Transmission Line	Transformer Protection	Motor Protection
Right Answer	B			

Question No. 99	A 6.6kV Crusher Motor of rating 550KW having rated speed 739 rpm. Find out the nearest value of Full load current in Ampere from the following option			
Answer Options	A)	B)	C)	D)
	40 A	60 A	90 A	80 A
Right Answer	B			

Question No. 100	A 6.6 kV Motor to be installed at Outdoor. It should have Degree of Protection			
Answer Options	A)	B)	C)	D)
	IP 30	IP 40	IP 55	IP 60
Right Answer	C			

