

CII – iPATE 1.0 (2020)

Computer Based PAN India Examination

Category: GRADUATE ENGINEER (ENTRY LEVEL)

Engineering Discipline: INSTRUMENTATION 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">Quantitative AptitudeAnalytical ReasoningData InterpretationEnglish Communication	20
21 to 40	Section II : Professional Abilities	<ul style="list-style-type: none">Project ManagementHealth, Safety & Risk ManagementEnvironmental LawsSocial Responsibility & EthicsFinance & AccountsLegal, Contracts & Arbitration	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
TOTAL			100

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>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.</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>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:</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			

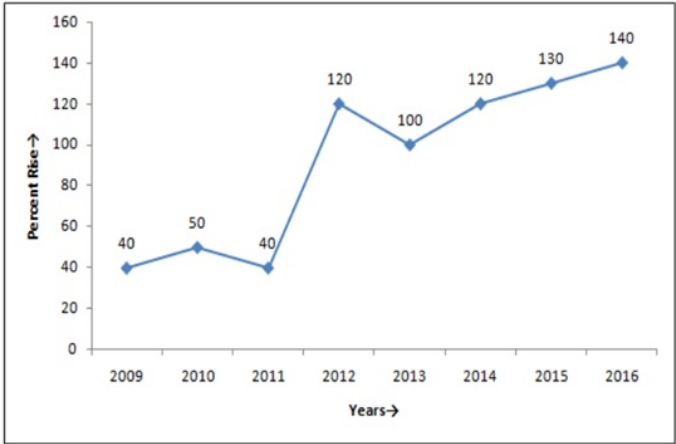
Question No. 11	Attracted by the serenity of the evening, a friend and I lately went to one of the public walks near the city. Here we (1) _____ together for some time. Then my friend, stopping suddenly, (2) _____ by the elbow, and led me out of the public walk. I could perceive by the quickness of this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

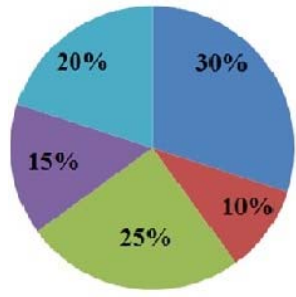
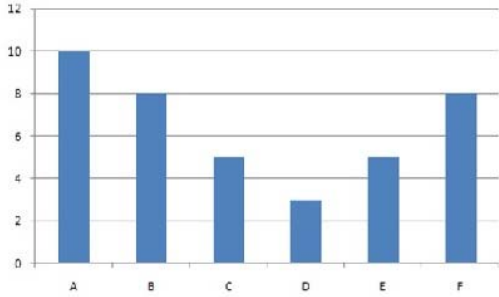
Question No. 13	Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order. A: A man on a bike had to ride on the pavement. B: When he tried to plunge onto the road, a car hit him. C: As the bus inched through the evening life, the traffic grew. D: There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

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

Question No. 15	What is the synonym of SEIZE			
Answer Options	A) Start	B) Release	C) Length	D) 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;">The Numbers in the Brackets give the Maximum Marks in Each Subject.</p> <table border="1" data-bbox="371 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>	<p>A) 0.035</p>	<p>B) 0.045</p>	<p>C) 0.025</p>	<p>D) 0.038</p>
<p>Right Answer</p>	<p>C</p>			

<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>	<p>A) Paternal grandmother</p>	<p>B) Maternal grandmother</p>	<p>C) Paternal grandfather</p>	<p>D) Maternal grandfather</p>
<p>Right Answer</p>	<p>C</p>			

<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>	<p>A) 21 hours</p>	<p>B) 12 hours</p>	<p>C) 18 hours</p>	<p>D) 15 hours</p>
<p>Right Answer</p>	<p>C</p>			

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

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			

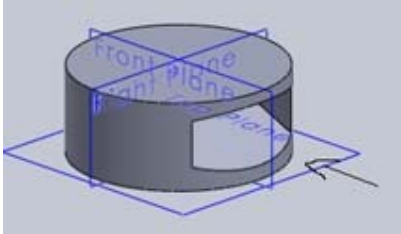
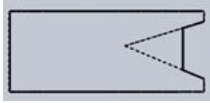

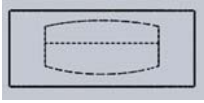
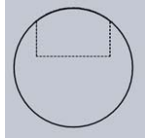
Question No. 48	The monomers of Buna-S rubber are			
Answer Options	A)	B)	C)	D)
	styrene and butadiene	isoprene and butadiene	vinyl chloride and sulphur	butadiene
Right Answer	A			

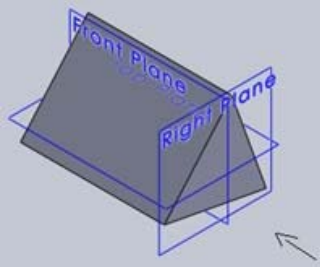
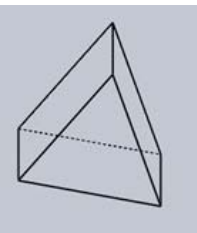
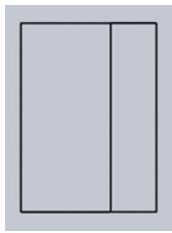
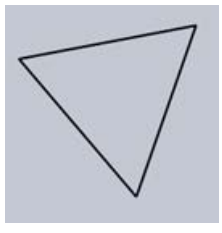
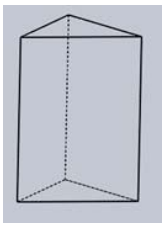
Question No. 49	Equal masses of ethane and hydrogen are mixed in any empty container at 25°C. The fraction of total pressure exerted by hydrogen is			
Answer Options	A) 1:2	B) 1:1	C) 1:16	D) 15:16
Right Answer	D			

Question No. 50	n-propyl bromide on treating with alcoholic KOH produces			
Answer Options	A) propyne	B) propene	C) propane	D) 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) line of interpenetration	B) conconcyclic curves of lines	C) hidden lines	D) 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) assumption	B) line	C) removing material	D) 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>A glass electrode is used for the measurement of</p>			
<p>Answer Options</p>	<p>A) Conductivity</p>	<p>B) pH</p>	<p>C) Dissolved oxygen</p>	<p>D) Turbidity</p>
<p>Right Answer</p>	<p>B</p>			

<p>Question No. 57</p>	<p>Feedback in an amplifier always helps to</p>			
<p>Answer Options</p>	<p>A) control its output</p>	<p>B) increase its gain</p>	<p>C) decrease its input impedance</p>	<p>D) stabilize its gain</p>
<p>Right Answer</p>	<p>A</p>			

Question No. 58	Which of the following level sensors cannot be used for non-contact level measurement?			
Answer Options	A)	B)	C)	D)
	Radar level sensor	Radiation level sensor	Ultrasonic level sensor	Conductivity based level sensor
Right Answer	D			

Question No. 59	A Universal load cell is designed to measure			
Answer Options	A)	B)	C)	D)
	Tensile forces only	Compressive forces only	Both tensile and compressive forces	Transverse forces only
Right Answer	C			

Question No. 60	A cold junction compensation unit			
Answer Options	A)	B)	C)	D)
	Maintains the cold junction of a thermocouple at 0 °C	Compensates the errors introduced due to the temperature gradient between the hot and the cold junctions	Maintains the cold junction of a thermocouple at a constant temperature	Corrects the errors produced due to variation of the reference junction temperature
Right Answer	D			

Question No. 61	Which of the following temperature sensors have the widest measurement range?			
Answer Options	A)	B)	C)	D)
	PT100	NTC thermistor	K type thermocouple	PTAT integrated circuit temperature sensor
Right Answer	C			

Question No. 62	Which of the following statements does not hold true for a thermowell?			
Answer Options	A)	B)	C)	D)
	Protects the temperature sensor from mechanical damage	Allows removal of the sensor when the process is operational	Protects the temperature sensor from corrosion	Enhances the speed of response of the temperature measurement system
Right Answer	D			

Question No. 63	Intrinsic safety is based on the principle of			
Answer Options	A)	B)	C)	D)
	Energy limiting	Confinement of the explosion in a specially designed enclosure	Segregation of the source of ignition from the combustible mixture	Use of special fire-retardant chemicals
Right Answer	A			

Question No. 64	A pressure transmitter used in steam service is usually installed			
Answer Options	A)	B)	C)	D)
	May be installed anywhere as per convenience	At the height of pressure tap and close coupled to the pressure tap	Below the elevation of the pressure tap	Above the elevation of the pressure tap
Right Answer	C			

Question No. 65	When a reverse bias is applied to a p-n junction, the width of the depletion region			
Answer Options	A)	B)	C)	D)
	remains the same	is increased	is decreased	may increase or decrease
Right Answer	B			

Question No. 66	Which of the following control valves is the best suited for use in slurry service?			
Answer Options	A)	B)	C)	D)
	Saunders valve	Gate valve	Butterfly valve	Ball valve
Right Answer	A			

Question No. 67	A sinusoidal mechanical motion applied to a LVDT has a frequency of 20Hz and the excitation frequency is 2000Hz. The output will contain frequencies			
Answer Options	A)	B)	C)	D)
	20Hz only	2000Hz only	1980Hz and 2020Hz	1980Hz, 2000Hz and 2020Hz
Right Answer	C			

Question No. 68	A control system with closed loop poles on the right-hand side of s-plane is			
Answer Options	A)	B)	C)	D)
	marginally stable	limitedly stable	unstable	stable
Right Answer	C			

Question No. 69	In a two-terminal network, the open-circuit voltage measured at the given terminals by an electronic voltmeter is 100 V. A short-circuit current measured at the same terminals by an ammeter of negligible resistance is 5A. If a load resistor of 80 ohms is connected at the same terminals, then the current in the load resistor will be			
Answer Options	A)	B)	C)	D)
	1A	1.25A	6A	6.25A
Right Answer	A			

Question No. 70	The term Hysteresis is associated with			
Answer Options	A)	B)	C)	D)
	On-off Control	P-I Control	Feed-forward Control	Ratio Control
Right Answer	A			

Question No. 71	A DC voltage source is connected across a series RLC circuit. Under steady conditions, the applied DC voltage drops entirely across the			
Answer Options	A)	B)	C)	D)
	R only	L only	C only	R & L combination
Right Answer	C			

Question No. 72	A circuit which resonates at 1MHz has a Q of 50. Bandwidth between half power point is			
Answer Options	A)	B)	C)	D)
	20 kHz	200 kHz	20 Hz	200 Hz
Right Answer	A			

Question No. 73	For a circuit, the 3 dB frequencies are given as 372.1 Hz and 340.3 Hz. Then at resonance the centre frequency will be			
Answer Options	A)	B)	C)	D)
	356.19Hz	355.89Hz	355.84Hz	370.68Hz
Right Answer	C			

Question No. 74	In a series resonant circuit, $V_c=100V$, $V_L=100V$ and $V_r=50V$. What is value of the source voltage.			
Answer Options	A)	B)	C)	D)
	Zero	50V	350V	200V
Right Answer	B			

Question No. 75	Which of the following is essential for the reciprocity theorem to be applicable?			
Answer Options	A)	B)	C)	D)
	Linearity	Bilateralism	No initial history	Both (A) and (B)
Right Answer	D			

Question No. 76	A generator of Internal impedance $[Z_c]$ delivers maximum power to a load impedance $[Z_p]$, only if			
Answer Options	A)	B)	C)	D)
	$Z_p < Z_c$	$Z_p > Z_c$	$Z_p = Z_c$	$Z_p = 2Z_c$
Right Answer	C			

Question No. 77	Which of the following is applicable to any network linear or nonlinear, active or passive, time varying or invariant as long as Kirchhoff's laws are not violated?			
Answer Options	A)	B)	C)	D)
	Tellegen's theorem	Reciprocity theorem	Maximum power transfer theorem	Superposition theorem
Right Answer	A			

Question No. 78	How many 200W/220V incandescent lamps connected in series would consume the same total power as a single 100W/220V incandescent lamp?			
Answer Options	A)	B)	C)	D)
	Not possible	2	3	4
Right Answer	B			

Question No. 79	In a series RLC circuit for lower frequency, power factor is _____ and for higher frequency, power factor is _____			
Answer Options	A)	B)	C)	D)
	leading, lagging	lagging, leading	independent of frequency	same in both cases
Right Answer	A			

Question No. 80	Twelve 1 ohm resistors are used as edge to form a cube. The resistance between two diagonally opposite corners of the cube is			
Answer Options	A)	B)	C)	D)
	5/6 ohm	6/5 ohm	1 ohm	none of these
Right Answer	A			

Question No. 81	Electrostatic instruments are normally used for			
Answer Options	A)	B)	C)	D)
	low current measurements	high current measurements	low voltage measurements	high voltage measurements
Right Answer	D			

Question No. 82	PMMC type instruments normally used for			
Answer Options	A)	B)	C)	D)
	air friction damping	fluid friction damping	eddy current damping	none of the above
Right Answer	C			

Question No. 83	No eddy current and hysteresis losses occur in			
Answer Options	A)	B)	C)	D)
	electrostatic instruments	PMMC instruments	moving iron instruments	electrodynamometer instruments
Right Answer	A			

Question No. 84	A 0-200V voltmeter has a guaranteed accuracy of 1% of full-scale reading. The voltage measured by this instrument is 100V. Calculate the limiting error in per cent			
Answer Options	A)	B)	C)	D)
	4	2.5	2	1
Right Answer	C			

Question No. 85	A meter has a full scale of 90 deg. at current of 1A. This meter has perfect square law response. What is the current when the deflection angle is 45 deg.			
Answer Options	A)	B)	C)	D)
	0.5A	0.25A	0.707A	0.67A
Right Answer	C			

Question No. 86	The full-scale deflection current of a meter is 1mA and its internal resistance is 100 ohm. This meter is to have full deflection when 100 V measured. What is the value of series resistor to be used?			
Answer Options	A)	B)	C)	D)
	99.90 k Ω	100 k Ω	99.99 Ω	100 Ω
Right Answer	A			

Question No. 87	A diode whose internal resistance is 10 ohm is to power supply to 1000 ohm load from 110 V(rms) source of supply. Calculate the DC and AC Load currents.			
Answer Options	A)	B)	C)	D)
	49.02mA, 77mA	77mA, 49.02mA	77A, 49.02A	49.02A, 77A
Right Answer	A			

Question No. 88	While choosing operating point Q, which of the following factors of BJT are considered?			
Answer Options	A)	B)	C)	D)
	power supply	AC and DC load	Maximum transistor ratings	All of the above
Right Answer	D			

Question No. 89	A diode whose internal resistance is 10 ohm is to power supply to 1000 ohm load from 110 V(rms) source of supply. Calculate the Ripple factor.			
Answer Options	A)	B)	C)	D)
	12.1	0.121	1.21	1.01
Right Answer	C			

Question No. 90	Frequency of oscillations in Wien bridge oscillator with R = 220k Ohm, C = 250 Pf is			
Answer Options	A)	B)	C)	D)
	4.89 kHz	2.89 kHz	3.89 kHz	1.89 kHz
Right Answer	B			

Question No. 91	The MOSFET switch in its On state may be considered equivalent to			
Answer Options	A)	B)	C)	D)
	Inductor	battery	capacitor	resistor
Right Answer	C			

Question No. 92	D flip-flop is formed by combining the inputs of			
Answer Options	A)	B)	C)	D)
	T flip flop	S-R flip flop	J-K flip flop	Master slave J-K flip flop
Right Answer	B			

Question No. 93	The complete set of only those logic gates designed as universal gates is			
Answer Options	A)	B)	C)	D)
	NOT, OR and AND gates	XNOR, NOR and NAND gates	NOR and NAND gates	XOR, NOR and NAND gates
Right Answer	C			

Question No. 94	The 4 bit 2's complement representation of a decimal number is 1000. The number is			
Answer Options	A)	B)	C)	D)
	8	0	-7	-8
Right Answer	D			

Question No. 95	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. 96	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. 97	The full scale output of a 8 bit DAC is 0 to 10V. The per cent resolution is			
Answer Options	A)	B)	C)	D)
	0.06V	0.04V	0.03V	0.02V
Right Answer	B			

Question No. 98	PD controller improves			
Answer Options	A)	B)	C)	D)
	transient response	steady state response	both (a) and (b)	neither (a) and (b)
Right Answer	A			

Question No. 99	Feedback control system are			
Answer Options	A)	B)	C)	D)
	low pass filters	high pass filters	band pass filters	none of these
Right Answer	A			

Question No. 100	On Off controller is a			
Answer Options	A)	B)	C)	D)
	integral controller	P Controller	PID controller	non-linear Controller
Right Answer	D			