

# CII – iPATE 1.0 (2020)

Computer Based PAN India Examination

Category: GRADUATE ENGINEER (ENTRY LEVEL)

Engineering Discipline: ELECTRONICS & COMM. 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>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			

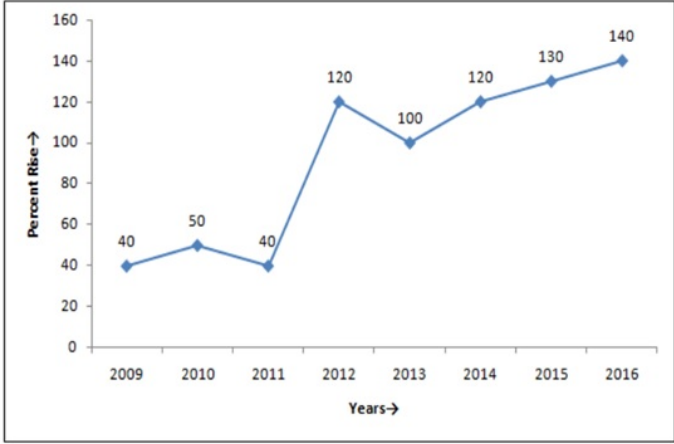
Question No. 11	Attracted by the serenity of the evening, a friend and I lately went to one of the public walks near the city. Here we (1) _____ together for some time. Then my friend, stopping suddenly, (2) _____ by the elbow, and led me out of the public walk. I could perceive by the quickness of this (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			

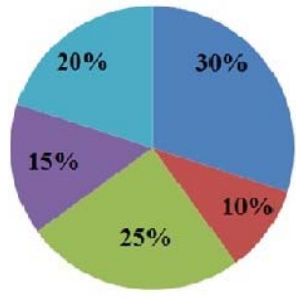
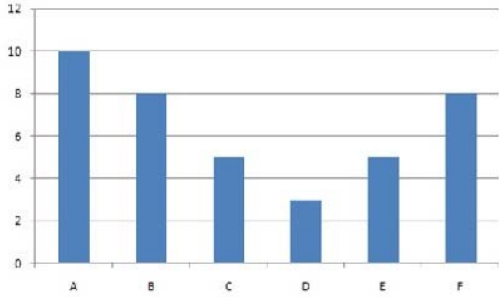
Question No. 13	<b>Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.</b>  A: A man on a bike had to ride on the pavement. B: When he tried to plunge onto the road, a car hit him. C: As the bus inched through the evening life, the traffic grew.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

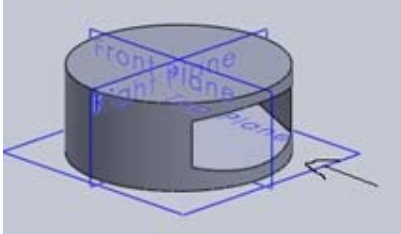
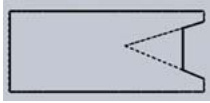

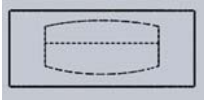
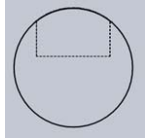
Question No. 48	The monomers of Buna-S rubber are			
Answer Options	A)	B)	C)	D)
	styrene and butadiene	isoprene and butadiene	vinyl chloride and sulphur	butadiene
Right Answer	A			

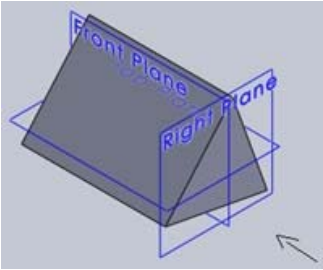
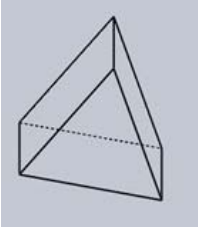
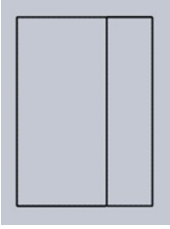
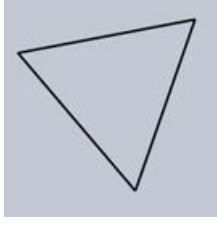
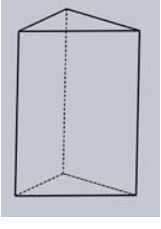
Question No. 49	Equal masses of ethane and hydrogen are mixed in any empty container at 25°C. The fraction of total pressure exerted by hydrogen is			
Answer Options	A)	B)	C)	D)
	1:2	1:1	1:16	15:16
Right Answer	D			

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			

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

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

Question No. 56	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)
	356.19 Hz	355.89 Hz	355.84 Hz	370.68 Hz
Right Answer	C			

Question No. 57	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)
	0V	50V	350V	200V
Right Answer	B			

Question No. 58	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. 59	The rms value of the voltage $u(t) = 3 + 4\cos(3t)$ is			
Answer Options	A)	B)	C)	D)
	$\sqrt{17}$ V	5 V	7 V	$(3+2\sqrt{2})$ V
Right Answer	A			

Question No. 60	A passive 2-port network is in a steady-state. Compared to its input, the steady state output can never offer			
Answer Options	A)	B)	C)	D)
	higher voltage	lower impedance	greater power	better regulation
Right Answer	C			

Question No. 61	The Work done in carrying a charge through an equipotential surface			
Answer Options	A)	B)	C)	D)
	depends on the charge Q	Zero	Infinity	Depends on the distance
Right Answer	B			

Question No. 62	In a given field, divergence is zero at			
Answer Options	A)	B)	C)	D)
	source point	sink point	source and sink point	neither source nor sink
Right Answer	D			

Question No. 63	In a conductor -dielectric boundary, the electric field is always			
Answer Options	A)	B)	C)	D)
	Zero	absent	Normal to the surface	along the surface
Right Answer	C			

Question No. 64	A discrete time signal is given as below $x(n) = \cos(\pi n/8)\cos(\pi n/8)$			
Answer Options	A)	B)	C)	D)
	periodic with period $16\pi$	periodic with period $16(\pi+1)$	periodic with period 8	not periodic
Right Answer	D			
NOTE	Question was displayed incorrectly at candidates' terminals. Hence '1' mark has been given to all candidates, who attempted or not.			

Question No. 65	Consider two signals given below: $x[n] = \{1,2,4\}$ $h[n] = \{1,1,1,1,1\}$ the convolution $y[n] = x[n]*h[n]$			
Answer Options	A) $\{1,3,7,7,7,6,4\}$	B) $\{1,3,3,7,7,6,4\}$	C) $\{1,2,4\}$	D) $\{1,3,7\}$
Right Answer	A			

Question No. 66	Which one is time invariant system?			
Answer Options	A) $y(n)=x(2n)$	B) $y(n)=x(n)+x(n-1)$	C) $y(n)=x(n/2)$	D) All of these
Right Answer	B			

Question No. 67	The damping frequency of a system is 4.7 rad/s. The second overshoot will occur at			
Answer Options	A) 2.0s	B) 1.34s	C) 0.66s	D) 1.49s
Right Answer	A			

Question No. 68	A system with zero initial conditions has the closed loop transfer function $T(s) = \frac{(s^2+4)}{(s+1)(s+4)}$ . The system output is zero at the frequency			
Answer Options	A) 0.5 rad/s	B) 1 rad/s	C) 2 rad/s	D) 4 rad/s
Right Answer	C			

Question No. 69	In case of second order differential equation damping ratio is unity. The poles are			
Answer Options	A) equal, positive and real	B) imaginary and complex conjugates	C) equal, negative and real	D) None of these
Right Answer	C			

Question No. 70	While choosing operating Q-point, which of the following factors of BJT are considered?			
Answer Options	A) power supply	B) AC and DC load	C) Maximum transistor rating	D) All of these
Right Answer	D			

Question No. 71	Heat sinks are used in power amplifier circuits primarily to increase			
Answer Options	A) the voltage gain	B) the output power	C) collector dissipation rating of the transistor	D) dissipation of energy of free electrons
Right Answer	C			

Question No. 72	Current limited power supplies can prevent damage to			
Answer Options	A) pass transistors	B) rectifier diodes and power transformers	C) other circuits in the system	D) All of the above
Right Answer	D			

Question No. 73	The complete set of only those logic gates designed as universal gates is			
Answer Options	A) NOT, OR and AND gates	B) XNOR, NOR and NAND gates	C) NOR and NAND gates	D) XOR, NOR and NAND gates
Right Answer	C			

Question No. 74	The 4 bit 2's complement representation of a decimal number is 1000. The number is			
Answer Options	A) 8	B) 0	C) (-7)	D) (-8)
Right Answer	D			

Question No. 75	Number of comparators required in a 3 bit comparator type ADC is			
Answer Options	A) 2	B) 3	C) 7	D) 8
Right Answer	C			

Question No. 76	The maximum theoretical Power efficiency of Class B Push-Pull Amplifier for a Symmetrical Square Wave can be			
Answer Options	A) $\leq 50\%$	B) $\leq 78.5\%$	C) $\leq 100\%$	D) $\leq 62.5\%$
Right Answer	C			



Question No. 77	The Output of a 2 bit comparator is Logic 1 whereas the 2 bit Input A is greater than 2 bit Input B. The number of combinations for which the Output is Logic 1 is			
Answer Options	A)	B)	C)	D)
	2	6	8	10
Right Answer	B			

Question No. 78	For measurement of high frequency signal, the BW of an oscilloscope should be			
Answer Options	A)	B)	C)	D)
	Equal to Signal frequency	Does not depend on Signal	At least 4 times of signal	Depends on sampling frequency
Right Answer	C			

Question No. 79	The interrupt supports to			
Answer Options	A)	B)	C)	D)
	to execute different task and needs another interrupt to come back to original task	stop the running task only	to execute different task and comes back automatically to original task after finishing new task	the peripherals only stop functioning
Right Answer	C			

Question No. 80	Theoretical Current Rating of a Freewheel diode in a full wave bridge			
Answer Options	A)	B)	C)	D)
	1/3 of the load current	1/2 of the load current	Equal to Load current	Double of the Load current
Right Answer	B			

Question No. 81	Advantage of Switch Mode Power Supply (SMPS) is			
Answer Options	A)	B)	C)	D)
	Small size of Transformer due to high frequency operation	Better electromagnetic Property	No remarkable advantage	High Frequency switching
Right Answer	A			

Question No. 82	The Voltage Source follows the characteristics of			
Answer Options	A)	B)	C)	D)
	Faraday's Law	Norton's Theorem	Thevenin's Theorem	Lenz's Law
Right Answer	C			

Question No. 83	High Frequency switching of a transistor depends on			
Answer Options	A)	B)	C)	D)
	Collector Current Rating	Collector Voltage Rating	Gain	Slew Rate
Right Answer	D			

Question No. 84	Main Controls of an Oscilloscope is			
Answer Options	A)	B)	C)	D)
	Horizontal & Vertical Trigger	Function Generation	Sampling	Display
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. 85	A BJT based audio power amplifier is designed to feed the output signal to a speaker. The preferred coupling at the output stage for blocking any DC component.			
Answer Options	A)	B)	C)	D)
	Capacitor Coupling	Inductor Coupling	Transformer Coupling	Diode Coupling
Right Answer	C			

Question No. 86	A sinusoidal wave is fed to a device with non-linear Input-Output characteristics, the output waveform will be			
Answer Options	A)	B)	C)	D)
	Periodic wave with harmonic distortion	Undistorted Wave	DC	Always Clamped Output
Right Answer	A			

Question No. 87	In some integrated circuit designs, reverse-biased diode configurations with transistors are used to act as capacitors. In such cases, the parameters need to be considered: 1) Peak inverse voltage 2) Transition capacitance corresponding to the voltage applied 3) The series ohmic resistance of the diode			
Answer Options	A)	B)	C)	D)
	Peak inverse voltage and Transition capacitance corresponding to the voltage applied	Transition capacitance corresponding to the voltage applied and the Series ohmic resistance of the diode	Peak inverse voltage and the Series ohmic resistance of the diode	Peak inverse voltage, Transition capacitance corresponding to the voltage applied and the series ohmic resistance of the diode
Right Answer	D			

Question No. 88	While designing a feedback control system, which of the following may be used in circuitry to sense the angular position of a rotary object: 1) Linear Potentiometer 2) Angular potentiometer 3) LVDT 4) Standard Synchro Transmitter and Receiver			
Answer Options	A)	B)	C)	D)
	Only 1	None	2 and 3	All the 4 types
Right Answer	D			

Question No. 89	A fault alarm system is needed to be designed for a chemical plant that takes in multiple fault input signals and drive a large LED alarm that lights on when the input signal to it is close to zero (ground) as in a wired-OR connection. Which of the following designs of a transistor or IC based circuit may be used for this purpose?			
Answer Options	A)	B)	C)	D)
	Totem Pole	Open Collector	Darlington Pair	Capacitive Coupling
Right Answer	B			

Question No. 90	The processing speed of Microcontroller and Microprocessor are in the order of			
Answer Options	A)	B)	C)	D)
	MC : 100 MHz - 1 GHz and MP : 100 MHz - 1 GHz	MC : 8 -50 MHz and MP : 100 MHz - 1 GHz	MC : 8 -50 MHz and MP : 8 - 50 MHz	Both less than 8 MHz
Right Answer	B			

Question No. 91	The heat generation in Microprocessor depends on			
Answer Options	A)	B)	C)	D)
	Cooling arrangement	Peripheral Components	Fixed	Frequency of operation
Right Answer	D			

Question No. 92	Application of Microcontroller and Microprocessor are			
Answer Options	A)	B)	C)	D)
	MC- Specific MP - Non Specific	MC- Specific MP- Specific	MC- Non Specific MP- Non Specific	Does not depend on application
Right Answer	A			

Question No. 93	A microcontroller-based system uses a data bus with a data enable input (positive logic). The True Statement is			
Answer Options	A)	B)	C)	D)
	Data should be present after the data enable signal is on.	Data should be present before the data enable signal is on	Data should settle before the data enable signal is on.	Data and data enable signal should occur at the same time
Right Answer	C			

Question No. 94	A Sample-and-Hold circuit is used for designing of which of the following systems: 1) PCM 2) AM 3) PPM 4) PWM 5) PAM			
Answer Options	A)	B)	C)	D)
	1, 3, 4 and 5	1, 2, 3, 4 and 5	Only 1	1 and 5
Right Answer	A			

Question No. 95	A Phase-Locked-Loop is not used for designing			
Answer Options	A)	B)	C)	D)
	FSK demodulator	AM demodulator	FM demodulator	FM and FSK demodulator
Right Answer	B			

Question No. 96	Which of the following methods are used for microwave power measurement: 1) Calorimeter Wattmeter 2) Bolometer 3) Thermocouple loop 4) Crystal detectors			
Answer Options	A)	B)	C)	D)
	1, 3 and 4	1, 2 and 4	1 and 2	1, 2, 3 and 4
Right Answer	D			

Question No. 97	The RCS (Radar Cross Section) is			
Answer Options	A)	B)	C)	D)
	Dependent on the shape of the Target and Radar frequency	Depend on the shape of the Target only	Depend on frequency of Radar only	Depends on distance of the target only
Right Answer	A			

Question No. 98	LED display Technology has			
Answer Options	A)	B)	C)	D)
	High Display brightness, Wide Viewing angle and High Resolution	High Display brightness, Narrow Viewing angle and High Resolution	High Display brightness, Wide Viewing angle and Low Resolution	Low Display brightness, Wide Viewing angle and High Resolution
Right Answer	C			

Question No. 99	The different types of Noise Jamming are			
Answer Options	A)	B)	C)	D)
	Swept Spot Jamming, Barrage Jamming and Deception Jamming	Swept Spot Jamming, Barrage Jamming and Multiple Spot Jamming	Deception Jamming, Barrage Jamming and Multiple Spot Jamming	Swept Spot Jamming, Deception Jamming and Multiple Spot Jamming
Right Answer	B			

Question No. 100	The Log Periodic Antenna is used for EM wave measurement for frequency range			
Answer Options	A)	B)	C)	D)
	100 Hz to 10 KHz	10 KHz to 30 MHz	30 MHz to 1 GHz	1 GHz to 40 GHz
Right Answer	C			