

# National Employability Assessment Test and Industry Readiness Program

for Diploma Engineers and Professionals | Winter – 2022

Discipline: Electrical Engineering

Computer Based PAN India Examination held on 18.03.2023

Questions & Answers

(Published dtd. 29.03.2023)

## PAPER STRUCTURE

Question Nos.	Sections & Topics		Marks
1 to 40	Section I : General Aptitude	<ul style="list-style-type: none"><li>Quantitative Aptitude</li><li>Logical Reasoning</li><li>Data Interpretation</li><li>English Communication</li></ul>	40
41 to 60	Section II : Basic Concepts	<ul style="list-style-type: none"><li>General Physics</li><li>General Chemistry</li><li>Mechanics</li><li>Engineering Drawing</li></ul>	20
61 to 100	Section III : Technical Aptitude	<ul style="list-style-type: none"><li>Electrical Engineering</li></ul>	40
<b>TOTAL</b>			<b>100</b>

### NOTE:

- Exam Duration: 3 Hours
- Total 100 no. of Questions of 1 Mark each with Negative Marking of  $\frac{1}{4}$  Mark for every wrong answer
- Questions (Section wise) and respective Answer Options shuffled at Candidates' terminal

Question No. 1	In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?			
Answer Options	A)	B)	C)	D)
	7	6.75	6.25	6.5
Right Option	C			

Question No. 2	Today is Monday. After 61 days, it will be:			
Answer Options	A)	B)	C)	D)
	Thursday	Saturday	Tuesday	Wednesday
Right Option	B			

Question No. 3	3 pumps working 8 hours a day, can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?			
Answer Options	A)	B)	C)	D)
	9	10	12	11
Right Option	C			

Question No. 4	A man standing at a point P is watching the top of a tower, which makes an angle of elevation of $30^\circ$ with the man's eye. The man walks some distance towards the tower to watch its top and the angle of the elevation becomes $60^\circ$ . What is the distance between the base of the tower and the point P?			
Answer Options	A)	B)	C)	D)
	Data inadequate	8 units	12 units	43 units
Right Option	A			

Question No. 5	Find the largest 4-digit number, which gives the remainder 7 and 13 when divided by 11 and 17?			
Answer Options	A)	B)	C)	D)
	9900	9907	9807	None of these
Right Option	B			

Question No. 6	In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?			
Answer Options	A)	B)	C)	D)
	30%	100%	250%	70%
Right Option	D			

Question No. 7	A candidate who gets 20% marks fails by 10 marks but another candidate who gets 42% marks gets 12% more than the passing marks. Find the maximum marks.			
Answer Options	A)	B)	C)	D)
	75	68	37	100
Right Option	D			

Question No. 8	A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?			
Answer Options	A)	B)	C)	D)
	6%	4%	5%	3%
Right Option	A			

Question No. 9	A train travelling at 48 kmph completely crosses another train having half its length and travelling in opposite direction at 42 kmph, in 12 seconds. It also passes a railway platform in 45 seconds. The length of the platform is			
Answer Options	A)	B)	C)	D)
	560 m	450 m	400 m	600 m
Right Option	C			

Question No. 10	In a shower, 5 cm of rain falls. The volume of water that falls on 1.5 hectares of ground is:			
Answer Options	A)	B)	C)	D)
	750 cu. m	75 cu. m	75000 cu. m	7500 cu. m
Right Option	A			

Question No. 11	<p>A good way to figure out the relationship in a given question is to make up a sentence that describes the relationship between the first two words. Then, try to use the same sentence to find out which of the answer choices completes the same relationship with the third word.</p> <p>Cup is to coffee as bowl is to</p>			
Answer Options	A)	B)	C)	D)
	Food	Spoon	Soup	Dish
Right Option	C			

Question No. 12	<p>A student got twice as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly?</p>			
Answer Options	A)	B)	C)	D)
	12	16	18	24
Right Option	B			

Question No. 13	<p>Choose the statement that is best supported by the information given in the question passage.</p> <p>In the 1966 Supreme Court decision <i>Miranda v. Arizona</i>, the court held that before the police can obtain statements from a person subjected to an interrogation, the person must be given a Miranda warning. This warning means that a person must be told that he or she has the right to remain silent during the police interrogation. Violation of this right means that any statement that the person makes is not admissible in a court hearing.</p> <p>This paragraph best supports the statement that</p>			
Answer Options	A)	B)	C)	D)
	The police may no longer interrogate persons suspected of a crime unless a lawyer is present.	A Miranda warning must be given before a police interrogation can begin.	Police who do not warn persons of their Miranda rights are guilty of a crime.	The 1966 Supreme Court decision in <i>Miranda</i> should be reversed
Right Option	B			

Question No. 14	Here are some words translated from an artificial language. godabim means kidney stones romzbim means kidney beans romzbako means wax beans Which word could mean "wax statue"?			
Answer Options	A)	B)	C)	D)
	Godaromz	Lazbim	Romzpeo	Wasibako
Right Option	D			

Question No. 15	If A is the brother of B; B is the sister of C; and C is the father of D, how D is related to A?			
Answer Options	A)	B)	C)	D)
	Sister	Nephew	Cannot be determined	Brother
Right Option	C			

Question No. 16	Choose the word which is different from the rest.			
Answer Options	A)	B)	C)	D)
	Mandible	Sternum	Ulna	Pinna
Right Option	D			

Question No. 17	<p>In each question below is given a statement followed by three courses of action numbered I, II and III. You have to assume everything in the statement to be true, then decide which of the three given suggested courses of action logically follows for pursuing.</p> <p>Statement: Besides looks and appearances, it is also important to develop oneself from within.</p> <p>Courses of Action:</p> <p>I. One should not pay attention to fashion.  II. One should pay attention to fashion.  III. Books on self-development should be encouraged.</p>			
Answer Options	A)	B)	C)	D)
	Only II follows	Only III follows	Only I and III follow	Only I follows
Right Option	B			

Question No. 18	Arrange the words given below in a meaningful sequence. 1. Index 2. Contents 3. Title 4. Chapters 5. Introduction			
Answer Options	A)	B)	C)	D)
	3, 2, 5, 1, 4	3, 2, 5, 4, 1	2, 3, 4, 5, 1	5, 1, 4, 2, 3
Right Option	B			

Question No. 19	3, 10, 101, ?			
Answer Options	A)	B)	C)	D)
	10202	10201	10101	11012
Right Option	A			

Question No. 20	A disease always has			
Answer Options	A)	B)	C)	D)
	Cause	Cure	Patient	Germ
Right Option	A			

Question No. 21	<b>Question nos. 21 to 25:</b>																	
	<p>Splash.Inc produces fabric sold in rolls of 35 metres (units) for the wholesale textile market. The production manager at Splash.Inc has produced the following table to illustrate how the unit cost of their bestselling product falls as production increases. Total costs are derived by adding fixed costs and variable costs; the fixed costs used in the calculations total \$3m.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Scenario</th> <th style="width: 35%;">Total cost \$</th> <th style="width: 35%;">Unit cost \$</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>\$4,500,000</td> <td>\$18.00</td> </tr> <tr> <td>B</td> <td>\$5,400,000</td> <td>\$17.46</td> </tr> <tr> <td>C</td> <td>\$6,477,000</td> <td>\$16.94</td> </tr> <tr> <td>D</td> <td>\$7,776,000</td> <td>\$16.43</td> </tr> </tbody> </table> <p>How much are the variable costs in scenario B?</p>				Scenario	Total cost \$	Unit cost \$	A	\$4,500,000	\$18.00	B	\$5,400,000	\$17.46	C	\$6,477,000	\$16.94	D	\$7,776,000
Scenario	Total cost \$	Unit cost \$																
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C	\$6,477,000	\$16.94																
D	\$7,776,000	\$16.43																
Answer Options	A)	B)	C)	D)														
	\$2,400,000	\$1,500,000	\$750,000	Cannot tell														
Right Option	A																	

Question No. 22	How many units are produced in scenario A?			
Answer Options	A)	B)	C)	D)
	2,500,000	250,000	1,250,000	225,000
Right Option	B			

Question No. 23	How many more units are produced in scenario C compared to scenario A?			
Answer Options	A)	B)	C)	D)
	131,000	132,349	139,274	136,998
Right Option	B			

Question No. 24	By what percentage did the total unit cost in scenario A increase in order to realize the unit cost reduction between scenarios A and B?			
Answer Options	A)	B)	C)	D)
	117%	120%	121%	119%
Right Option	B			

Question No. 25	Which suggested answer would provide the best estimate of the unit cost if variable costs were \$750,000?			
Answer Options	A)	B)	C)	D)
	$\$18 \times 97\% = \text{new unit price}$	$\text{New unit cost} \times 97\% = \$18$	$\$28 \times 103\% = \text{new unit price}$	$\text{New unit cost} \times 103\% = \$18$
Right Option	B			

Question No. 26	<p><b>Question nos. 26 to 30:</b></p> <p>This following table is related to profit and loss and some values are missing. All the discounts are on the M.P. and the profit are on C.P.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Article</th> <th>Cost Price (Rs.)</th> <th>Profit (%)</th> <th>Marked Price (Rs.)</th> <th>Discount (%)</th> <th>Selling Price (Rs.)</th> </tr> </thead> <tbody> <tr> <td>Jeans</td> <td>2280</td> <td>---</td> <td>2720</td> <td>---</td> <td>---</td> </tr> <tr> <td>Shirt</td> <td>---</td> <td>30%</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>T-shirt</td> <td>---</td> <td>---</td> <td>2875</td> <td>14%</td> <td>---</td> </tr> <tr> <td>Suit</td> <td>2200</td> <td>---</td> <td>---</td> <td>---</td> <td>2640</td> </tr> <tr> <td>Saree</td> <td>---</td> <td>20%</td> <td>3800</td> <td>---</td> <td>---</td> </tr> </tbody> </table> <p>If the discount % and profit % of the Suit is same. Find out the M.P. of Suit?</p>				Article	Cost Price (Rs.)	Profit (%)	Marked Price (Rs.)	Discount (%)	Selling Price (Rs.)	Jeans	2280	---	2720	---	---	Shirt	---	30%	---	---	---	T-shirt	---	---	2875	14%	---	Suit	2200	---	---	---	2640	Saree	---	20%	3800	---	---
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Suit	2200	---	---	---	2640																																			
Saree	---	20%	3800	---	---																																			
Answer Options	A)	B)	C)	D)																																				
	Rs. 2800	Rs. 2200	Rs. 3300	Rs. 2500																																				
Right Option	C																																							

Question No. 27	If the M.P. of jeans is Rs. 140 more than the C.P. of Shirt and the difference between M.P. and S.P. of Shirt is Rs. 780. Find the discount % of Shirt?			
Answer Options	A)	B)	C)	D)
	17.56%	18.86%	19.76%	20.46%
Right Option	B			

Question No. 28	C.P. of Suit is how much percentage less than the M.P. of Jeans?			
Answer Options	A)	B)	C)	D)
	19.10%	18.60%	21.20%	18.40%
Right Option	A			

Question No. 29	The ratio of discount % and profit % of the T-shirt is 7:5. Find CP. of T-shirt? (approximately)			
Answer Options	A)	B)	C)	D)
	Rs. 2552	Rs. 2248	Rs. 2398	Rs. 2285
Right Option	B			



Question No. 30	If the ratio of the C.P. of the Jeans and Saree is 4:5, find out the discount % of Saree?			
Answer Options	A)	B)	C)	D)
	15%	10%	12%	20%
Right Option	B			

Question No. 31	<p><b>Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.</b></p> <p>A: Only natural dyes are used in Kalamkari and it involves several steps.          B: There are two distinctive styles of Kalamkari in India.          C: They are the Sri kalahasti style and the Machlipatnam style.          D: Kalamkari is a type of hand-painted or block-printed cotton textile, produced in the Indian States of Andhra Pradesh and Telangana.</p>			
Answer Options	A)	B)	C)	D)
	DCBA	CBDA	ACBD	DABC
Right Option	D			

Question No. 32	What is the antonym of MOROSE			
Answer Options	A)	B)	C)	D)
	Overawed	Cherubic	Cheerful	Agitated
Right Option	C			

Question No. 33	What is the synonym of ERRONEOUS			
Answer Options	A)	B)	C)	D)
	Erased	Wrong	Weak	Enormous
Right Option	B			

Question No. 34	A frustrated old man, Bandi Thakur was never tired of (1)_____ the exploits of his ancestors, with a little (2) _____ he would lapse into a reminiscent mood, push back the loosely tied turban from his close-cropped grizzled hair and start a familiar story, improvising (3)_____ details which, to the mirth of his audience, always kept changing with every recounting.			
Answer Options	A)	B)	C)	D)
	(1) extolling, (2) advising, (3) rational	(1) extolling, (2) prompting, (3) fanciful	(1) criticizing, (2) prompting, (3) sincere	(1) invoking, (2) arguing, (3) fanciful
Right Option	B			

Question No. 35	Even my goalies and the policemen, who have arrested me or (1) _____ me as a prisoner from place to place have been kind to me, and much of the (2) _____ of conflict and the sting of goal-life has been (3) _____ because of this human touch.			
Answer Options	A)	B)	C)	D)
	(1) escorted, (2) affinity, (3) toned down	(1) abandoned, (2) bitterness, (3) pumped up	(1) safeguarded, (2) kindness, (3) egged on	(1) escorted, (2) bitterness, (3) toned down
Right Option	D			

Question No. 36	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) sauntered, (2) caught, (3) gallop	(1) dance, (2) caught, (3) gallop
Right Option	C			

Question No. 37	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) measure, (2) dispersal, (3) at a remote position	(1) weight, (2) collection, (3) in juxtaposition with them	(1) ration, (2) mass, (3) nearer to them	(1) measure, (2) mass, (3) nearer to them
Right Option	D			

Question No. 38	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)	B)	C)	D)
	CDAB	CBAD	ADBC	DBCA
Right Option	A			

Question No. 39	Select the Antonym of OFFHAND			
Answer Options	A)	B)	C)	D)
	Appropriate	Premeditated	Universal	Accurate
Right Option	B			

Question No. 40	What is the synonym of SEIZE			
Answer Options	A)	B)	C)	D)
	Grasp	Length	Start	Release
Right Option	A			

Question No. 41	A pond of clear water appears less deep than it really is. This is due to			
Answer Options	A)	B)	C)	D)
	Dispersion	Refraction	The transparency of water	Reflection
Right Option	B			

Question No. 42	Friction can be reduced by changing from			
Answer Options	A)	B)	C)	D)
	Potential energy to kinetic energy	Sliding to rolling	Dynamic to static	Rolling to sliding
Right Option	B			

Question No. 43	Identify the vector quantity from the following			
Answer Options	A)	B)	C)	D)
	Angular momentum	Heat	Time	Work
Right Option	A			

Question No. 44	Intensity of sound at a point is _____ its distance from the source.			
Answer Options	A)	B)	C)	D)
	Directly proportional to square of	Inversely proportional to	Directly proportional to	Inversely proportional to square of
Right Option	D			

Question No. 45	Mercury is commonly used as a thermometric fluid rather than water because			
Answer Options	A)	B)	C)	D)
	Specific heat of mercury is more than water	Density of mercury is more than the water	Mercury has greater visibility than water	Specific heat of mercury is less than water
Right Option	C			

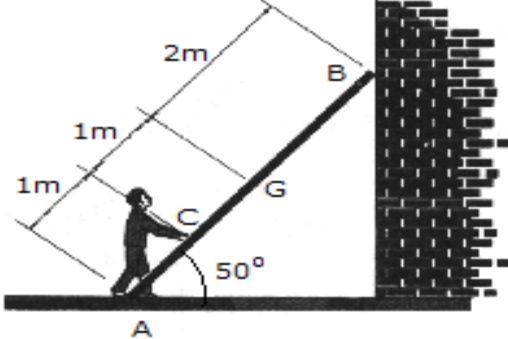
Question No. 46	Lime is sometimes applied to soil in order to			
Answer Options	A)	B)	C)	D)
	Make the soil more porous	Increase the alkalinity of the soil	Restore nitrates to the soil	Increase the acidity of the soil
Right Option	B			

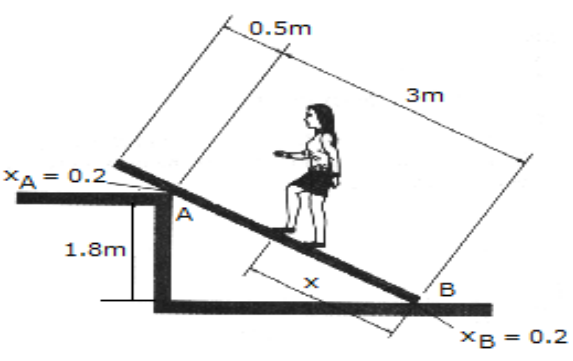
Question No. 47	Photo-oxidation is			
Answer Options	A)	B)	C)	D)
	Photo respiration	Photolysis	Light and oxygen induced breakdown	All of the above
Right Option	D			

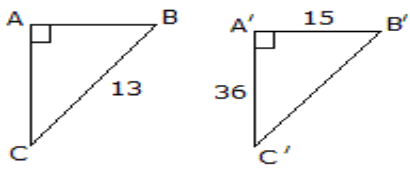
Question No. 48	The exhaled air contains			
Answer Options	A)	B)	C)	D)
	Carbon dioxide only	A mixture of carbon dioxide and nitrogen	A mixture which has more carbon dioxide than oxygen	A mixture of carbon dioxide, nitrogen and oxygen in which nitrogen has the highest percentage
Right Option	D			

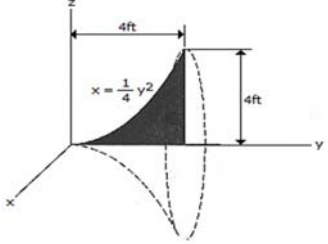
Question No. 49	The ionization energy of hydrogen atom in the ground state is $x$ KJ. The energy required for an electron to jump from 2nd orbit to 3rd orbit is			
Answer Options	A)	B)	C)	D)
	$5x$	$7.2x$	$x/6$	$5x/36$
Right Option	D			

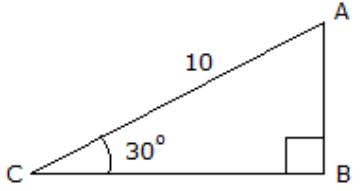
Question No. 50	The oldest rocks in the earth's crust were once molten, and came from deep inside the earth. The molten rock, called magma, spewed out in volcanic eruptions during the earth's early life and solidified into hard rock's called			
Answer Options	A)	B)	C)	D)
	Sedimentary rocks	Basalt	Granite	Igneous rocks
Right Option	D			

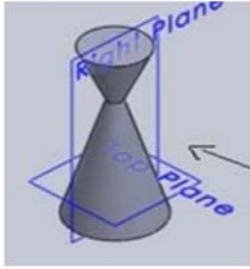
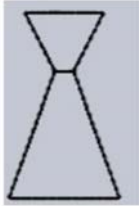
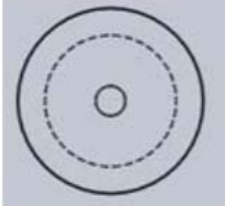
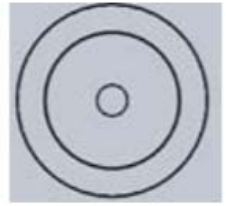
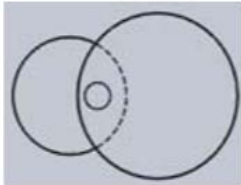
<p>Question No. 51</p>	 <p>A 17-kg ladder has a center of mass at G. If the coefficients of friction at A and B are <math>\mu_A = 0.3</math> and <math>\mu_B = 0.2</math>, respectively, determine the smallest horizontal force that the man must exert of the ladder at point C in order to push the ladder forward.</p>			
<p>Answer Options</p>	<p>A) F = 204 N</p>	<p>B) F = 166.8 N</p>	<p>C) F = 120.2 N</p>	<p>D) F = 288 N</p>
<p>Right Option</p>	<p>A</p>			

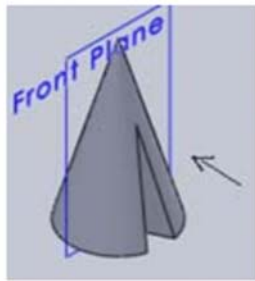

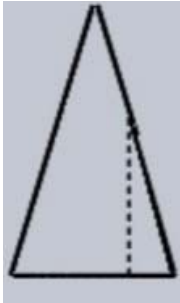

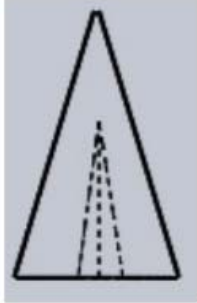
<p>Question No. 52</p>	 <p>A uniform beam has a mass of 18 kg and rests on two surfaces at points A and B. Determine the maximum distance x to which the girl can slowly walk up the beam before it begins to slip. The girl has a mass of 50 kg and walks up the beam with a constant velocity.</p>			
<p>Answer Options</p>	<p>A) x = 0.678 m</p>	<p>B) x = 0.712 m</p>	<p>C) x = 0.508 m</p>	<p>D) x = 1.005 m</p>
<p>Right Option</p>	<p>D</p>			

Question No. 53	 <p>Determine the length of side AB if the angle ABC is similar to the angle A'B'C':</p>			
Answer Options	A)	B)	C)	D)
	AB = 4	AB = 5	AB = 5.42	AB = 3
Right Option	B			

Question No. 54	 <p>Locate the center of gravity of the homogeneous "bell-shaped" volume formed by revolving the shaded area about the y axis.</p>			
Answer Options	A)	B)	C)	D)
	$\bar{y} = 3.33$ ft	$\bar{y} = 2.80$ ft	$\bar{y} = 3.20$ ft	$\bar{y} = 3.00$ ft
Right Option	A			

Question No. 55	 <p>Using the basic trigonomic functions, determine the length of side AB of the right triangle.</p>			
Answer Options	A)	B)	C)	D)
	h = 8.66	h = 11.55	h = 5.77	h = 5
Right Option	D			

<p>Question No. 56</p>	<p>Identify the top view for the below-given cone.</p> 			
<p>Answer Options</p>	<p>A)</p> 	<p>B)</p> 	<p>C)</p> 	<p>D)</p> 
<p>Right Option</p>	<p>C</p>			

<p>Question No. 57</p>	<p>Identify the front view of the following cone.</p> 			
<p>Answer Options</p>	<p>A)</p> 	<p>B)</p> 	<p>C)</p> 	<p>D)</p> 
<p>Right Option</p>	<p>A</p>			



Question No. 58	Curve of any shape can be drawn in perspective by enclosing it in a _____			
Answer Options	A)	B)	C)	D)
	Rectangle	Square	Cube	Cylinder
Right Option	A			

Question No. 59	A prism and cone got intersected at 90 degrees the line of intersection will be _____ and parallel to axis of _____			
Answer Options	A)	B)	C)	D)
	curve, cone	curve, prism	straight line, prism	straight line, cone
Right Option	B			

Question No. 60	The plane surfaces intersect in a _____ the line of intersection between two curved surfaces is _____ and between a plane surface and curved surfaces is a _____			
Answer Options	A)	B)	C)	D)
	curve, curve, curve	straight line, curve, straight line	straight line, curve, curve	straight line, straight line, curve
Right Option	C			

Question No. 61	A phasor represents			
Answer Options	A)	B)	C)	D)
	The magnitude of a quantity	The width of a quantity	The magnitude and a quantity direction	The phase angle
Right Answer	C			

Question No. 62	A sine wave with an rms value of 12 V is riding on a dc level of 18 V. The maximum value of the resulting waveform is			
Answer Options	A)	B)	C)	D)
	30 V	35 V	6 V	0 V
Right Answer	B			

Question No. 63	If the length of a cable is doubled, its capacitance			
Answer Options	A)	B)	C)	D)
	Becomes one-fourth	Remains unchanged	Becomes one-half	Becomes double
Right Answer	D			

Question No. 64	In cables the charging current			
Answer Options	A)	B)	C)	D)
	Lags the voltage by $90^\circ$	Leads the voltage by $90^\circ$	Leads the voltage by $180^\circ$	Lags the voltage by $180^\circ$
Right Answer	B			

Question No. 65	The insulating material for a cable should have			
Answer Options	A)	B)	C)	D)
	Low cost	High dielectric strength	High mechanical strength	All of the above
Right Answer	D			

Question No. 66	The insulating material for cables should			
Answer Options	A)	B)	C)	D)
	Be acid proof	Be non-inflammable	Be non-hygroscopic	Have all above properties
Right Answer	D			

Question No. 67	When a load resistance is removed from the output of a voltage divider circuit, the current drawn from the source			
Answer Options	A)	B)	C)	D)
	Remains the same	Is cut off	Decreases	Increases
Right Answer	C			

Question No. 68	In capacitor start single-phase motors			
Answer Options	A)	B)	C)	D)
	Current in the starting winding leads the voltage	Current in the starting winding lags the voltage	Current in the starting winding is in phase with voltage in running winding	None of the above
Right Answer	A			

Question No. 69	Which of the following motor will give relatively high starting torque?			
Answer Options	A)	B)	C)	D)
	Shaded pole motor	Split phase motor	Capacitor start motor	Capacitor run motor
Right Answer	C			

Question No. 70	An induction motor with 1000 r.p.m. speed will have			
Answer Options	A)	B)	C)	D)
	4 poles	8 poles	6 poles	2 poles
Right Answer	C			

Question No. 71	In an induction motor, no-load the slip is generally			
Answer Options	A)	B)	C)	D)
	4%	2%	1.5%	less than 1%
Right Answer	D			

Question No. 72	Star-delta starting of motors is not possible in case of			
Answer Options	A)	B)	C)	D)
	Variable speed motors	High speed motors	Single phase motors	Low horse power motors
Right Answer	C			

Question No. 73	The number of slip rings on a squirrel cage induction motor is usually			
Answer Options	A)	B)	C)	D)
	Two	Four	None	Three
Right Answer	C			

Question No. 74	The starting torque of a squirrel-cage induction motor is			
Answer Options	A)	B)	C)	D)
	Low	Same as full-load torque	Negligible	Slightly more than full-load torque
Right Answer	A			

Question No. 75	A coil of wire is placed in a changing magnetic field. If the number of turns in the coil is decreased, the voltage induced across the coil will			
Answer Options	A)	B)	C)	D)
	Remain constant	Decrease	Be excessive	Increase
Right Answer	B			

Question No. 76	An electromagnetic field exists only when there is			
Answer Options	A)	B)	C)	D)
	Current	An increasing current	Voltage	Decreasing current
Right Answer	A			
NOTE	Question was incorrectly displayed at candidates' terminals. Hence '1' mark has been graded to all candidates, who attempted or not.			

Question No. 77	If the cross-sectional area of a magnetic field increases, but the flux remains the same, the flux density			
Answer Options	A)	B)	C)	D)
	Doubles	Increases	Decreases	Remains the same
Right Answer	C			

Question No. 78	When the speed at which a conductor is moved through a magnetic field is increased, the induced voltage			
Answer Options	A)	B)	C)	D)
	Reaches zero	Decreases	Increases	Remains constant
Right Answer	C			

Question No. 79	For making a capacitor it is better to have a dielectric having			
Answer Options	A)	B)	C)	D)
	Permittivity which is neither high nor low	Permittivity same as that of air	Low permittivity	High permittivity
Right Answer	D			

Question No. 80	In solid insulator materials having only one kind of atom, the types of polarization which exist are			
Answer Options	A)	B)	C)	D)
	Electronic and permanent	Electronic and ionic	Electronic, ionic and permanent	Electronic only
Right Answer	D			

Question No. 81	Number of PN junction in an SCR is			
Answer Options	A)	B)	C)	D)
	Three	Two	Five	Four
Right Answer	A			

Question No. 82	TRIAC is a semiconductor power electronic device which contains			
Answer Options	A)	B)	C)	D)
	Two SCR's connected in reverse parallel	Two SCR's connected in parallel	Two BJT's connected in series	Two SCR's connected in series
Right Answer	A			

Question No. 83	The corona is considerably affected by which of the following?			
Answer Options	A)	B)	C)	D)
	Size of the conductor	Shape of the conductor	Surface condition of the conductor	All of the above
Right Answer	D			

Question No. 84	The material commonly used for insulation in high voltage cables is			
Answer Options	A)	B)	C)	D)
	Lead	Paper	Rubber	None of the above
Right Answer	B			

Question No. 85	The material generally used for armour of high voltage cables is			
Answer Options	A)	B)	C)	D)
	Steel	Copper	Brass	Aluminium
Right Answer	A			

Question No. 86	The power factor of industrial loads is generally			
Answer Options	A)	B)	C)	D)
	Unity	Zero	Lagging	Leading
Right Answer	C			

Question No. 87	A transformer cannot raise or lower the voltage of a D.C. supply because			
Answer Options	A)	B)	C)	D)
	There is no need to change the D.C. voltage	A D.C. circuit has more losses	Faraday's laws of electromagnetic induction are not valid since the rate of change of flux is zero	None of the above
Right Answer	C			

Question No. 88	If a transformer is continuously operated the maximum temperature rise will occur in			
Answer Options	A)	B)	C)	D)
	Core	Windings	Tank	Any of the above
Right Answer	B			

Question No. 89	Which of the following does not change in a transformer?			
Answer Options	A)	B)	C)	D)
	Current	Voltage	Frequency	All of the above
Right Answer	C			

Question No. 90	A sinusoidal current has an rms value of 14 mA. The peak-to-peak value is			
Answer Options	A)	B)	C)	D)
	22.6 mA	39.6 mA	45.12 mA	16 mA
Right Answer	B			

Question No. 91	A square wave has a period of 60 s. The first odd harmonic is			
Answer Options	A)	B)	C)	D)
	33.33 kHz	50 kHz	5 kHz	500 kHz
Right Answer	B			

Question No. 92	One sine wave has a positive-going zero crossing at $15^\circ$ and another sine wave has a positive-going zero crossing at $55^\circ$ . The phase angle between the two wave forms is			
Answer Options	A)	B)	C)	D)
	$0^\circ$	$45^\circ$	$40^\circ$	None of the above
Right Answer	C			

Question No. 93	Sine wave A has a positive-going zero crossing at $45^\circ$ . Sine wave B has a positive-going zero crossing at $60^\circ$ . Which of the following statements is true?			
Answer Options	A)	B)	C)	D)
	Wave A leads wave B by $15^\circ$ .	Wave A leads wave B by $105^\circ$ .	Wave A lags wave B by $105^\circ$ .	Wave A lags wave B by $15^\circ$ .
Right Answer	A			

Question No. 94	The average half-cycle value of a sine wave with a 40 V peak is			
Answer Options	A)	B)	C)	D)
	14.14 V	25.48 V	6.37 V	50.96 V
Right Answer	B			

Question No. 95	Two series resistors are connected to an ac source. If there are $7.5 V_{rms}$ across one resistor and $4.2 V_{rms}$ across the other, the peak source voltage is			
Answer Options	A)	B)	C)	D)
	10.60 V	16.54 V	1.65 V	5.93 V
Right Answer	B			



Question No. 96	A voltage divider consists of two 68 k resistors and a 24 V source. The unknown output voltage is			
Answer Options	A)	B)	C)	D)
	0 V	6 V	24 V	12 V
Right Answer	D			

Question No. 97	On which of the following voltage range settings will a voltmeter present the minimum load on a circuit?			
Answer Options	A)	B)	C)	D)
	500 V	1,000 V	1 V	50 V
Right Answer	B			

Question No. 98	The output of a certain voltage divider is 12 V with no load. When a load is connected, the output voltage			
Answer Options	A)	B)	C)	D)
	Remains the same	Increases	Decreases	Becomes zero
Right Answer	C			

Question No. 99	The parallel combination of a 470 resistor and a 1.5 k resistor is in series with the parallel combination of five 1 k resistors. The source voltage is 50 V. The percentage of the load current through any single 1 k resistor is			
Answer Options	A)	B)	C)	D)
	50%	25%	20%	100%
Right Answer	C			

Question No. 100	Fleming's left-hand rule is used to find			
Answer Options	A)	B)	C)	D)
	Direction of force on a current carrying conductor	Direction of induced emf	Direction of flux in solenoid	Direction of magnetic field due to a current carrying conductor
Right Answer	A			