Goa Staff Selection Commission

6th Floor, SPACES Building,Patto Plaza, Panaji -Goa,403001

Computer Based Test

Post Name : Technical Asistant (Mechanical/Electrical)

1	Question Description *	Fill in the blank with the most suitable option: The glass was made from _____material, making the contents hard to see.
	A *	clear
	B *	opaque
	C *	pure
	D *	transparent
	E *	None of the above
	Marks *	1
	Answer *	b

2

Question Description *	Spot the error in the underlined parts of the sentenece, if any: The other (1) delegates and him (2) immediately (3) accepted the resolution drafted (4)by the neutral states.
A *	1
B *	2
C *	3
D *	4
E *	None of the above
Marks *	1
Answer *	b

3

Question Description *	Fill in the blank with the most suitable option: He was known for his _____nature, rarely sharing what he had.
A *	stingy
B *	sparse
C *	generous
D *	tight
E *	None of the above
Marks *	1
Answer *	a

4

Question Description *	*Identify the part of the sentence that contains an error:* Everyone in the class have completed their assignments.
A *	Everyone
B *	in the class
C *	have completed
D *	their assignments
E *	None of the above
Marks *	1
Answer *	c

5

Question Description *	When Rani pointed out the flaws in the proposal, she *hit the nail on the head.* What does 'hit the nail on the head' mean?
A *	To completely misunderstand the situation
B *	To avoid addressing the issue
C *	To describe the problem or situation accurately
D *	To be overly critical
E *	None of the above
Marks *	1
Answer *	c

6

Question Description *	She *burned the midnight oil* to complete the project in time. What does "burn the midnight oil' mean?
A *	Work late at night
B *	Waste resources
C *	Party all night
D *	Rest peacefully
E *	None of the above
Marks *	1
Answer *	a

7

Question Description *	Select the antonym of the underlined word: The company's strategy was innovative, focusing on new market opportunities.
A *	creative
B *	advanced
C *	revolutionary
D *	unimaginative
E *	None of the above
Marks *	1
Answer *	d

8

Question Description *	Fill in the blank with the correct option: _____is a written account of a person's life written by another person.
A *	An autobiography
B *	A biography
C *	A novel
D *	A memoir
E *	None of the above
Marks *	1
Answer *	b

9

Question Description *	Select the antonym of the underlined word: The new policy was considered progressive by the employees who supported it.
A *	historical
B *	liberal
C *	forward
D *	regressive
E *	None of the above
Marks *	1
Answer *	d

10

Question Description *	Given below are four parts of a sentence. Rearrange the parts to form a meaningful sentence. A)which can benefit all sectors B) innovation and technology C) if used effectively D) are powerful tools
A *	BDAC
B *	CABD
C *	CBAD
D *	BCAD
E *	None of the above
Marks *	1
Answer *	a

11

Question Description *	Identify the synonym of the underlined word: Weaving seems like **<u>monotonous</u>** work
A *	Repetitive
B *	Exhausting
C *	Autonomous
D *	Unending
E *	None of the above
Marks *	1
Answer *	a

12

Question Description *	Identify the correct meaning of the underlined idiom: Our team leader is fond of <u>blowing his own trumpet.</u>
A *	Speaking very loudly
B *	Parading his own achievements
C *	Making lengthy speeches
D *	Looking after his own interest
E *	None of the above
Marks *	1
Answer *	b

13

Question Description *	Fill in the blank with the most suitable option: The luxury car was quite _____, priced well below other brands.
A *	priceless
B *	valuable
C *	costly
D *	reasonable
E *	None of the above
Marks *	1
Answer *	d

14

Question Description *	The *diligent* student completed her assignments on time. Identify the antonym of 'diligent'.
A *	Hardworking
B *	lazy
C *	sleepy
D *	focused
E *	None of the above
Marks *	1
Answer *	b

15

Question Description *	Choose the correct sentence:
A *	The cat lain on the warm bed
B *	The cat lay on the warm bed
C *	The cat lie on the warm bed
D *	The cat laid on the warm bed
E *	None of the above
Marks *	1
Answer *	b

16

Question Description *	Losing the job turned out to be *a blessing in disguise.* What does 'a blessing in disguise' mean?
A *	A seemingly bad situation that turns out to be good
B *	A seemingly good situation that turns out to be bad
C *	A great gift
D *	A misfortune
E *	None of the above
Marks *	1
Answer *	a

17

Question Description *	Read the following: “Speech can be a great gift but it can also be a consistent curse. If it is used carelessly, one's attitude can be completely misunderstood .” Select the option that matches with the writer's view.
A *	Being able to speak is a blessing
B *	Being able to speak is never a curse
C *	A speaker may be misunderstood
D *	Speech is uttering a curse at regular intervals
E *	None of the above
Marks *	1
Answer *	c

18

Question Description *	*Identify the part of the sentence that contains an error:* If I would have known about the event, I would have attended it.
A *	If I would have known
B *	about the event,
C *	I would have
D *	attended it
E *	None of the above
Marks *	1
Answer *	a

19

Question Description *	Identify the sentence that is grammatically correct:
A *	Neither of the answers are correct.
B *	Neither of the answers is correct.
C *	Neither answers is correct.
D *	Neither of the answer is correct.
E *	None of the above
Marks *	1
Answer *	b

20

Question Description *	Given below are four parts of a sentence. Rearrange the parts to form a meaningful sentence. P)and ensuring sustainable development Q) renewable energy sources R) are crucial S) in addressing climate change
A *	SPRQ
B *	QRPS
C *	PSRQ
D *	QRSP
E *	None of the above
Marks *	1
Answer *	d

21

Question Description *	The function $f(x)=\frac{sin2x+3x}{x}$ at x = 0 has value
A *	6
B *	2
C *	3
D *	5
E *	None of the above
Marks *	1
Answer *	d

22

Question Description *	Gamma function is defined as $\Gamma(\alpha)=\int_0^\infty e^{-t}t^{\alpha-1}dt$ then $\Gamma(1)$ is
A *	0
B *	1
C *	-1
D *	∞
E *	None of the above
Marks *	1
Answer *	b

23

Question Description *	The function $f(x)$ = $\frac{e^{2x}-1+3x}{x}$ at x = 0 has value
A *	1
B *	-1
C *	5
D *	0
E *	None of the above
Marks *	1
Answer *	c

24

Question Description *	The radius of convergence of $\frac{\sum_{k=1}^{\infty} x^k}{3^k}$ is
A *	3
B *	$\sqrt{3}$
C *	1
D *	2
E *	None of the above
Marks *	1
Answer *	a

25

Question Description *	The point on the line $x+2y=3$ nearest to the origin is
A *	(3/5,6/5)
B *	(1/5,7/5)
C *	(1,1)
D *	(2,1).
E *	None of the above
Marks *	1
Answer *	a

26

Question Description *	The Beta function is $\beta(m,n)=\int_0^1 x^{m-1}(1-x)^{n-1}dx$ then $\beta(m,2)$ is .
A *	$\frac{1}{m^2}$
B *	$\frac{1}{m(m-1)}$
C *	$\frac{1}{m(m+1)}$
D *	$\frac{m}{m+1}$
E *	None of the above
Marks *	1
Answer *	c

27

Question Description *	If the power series expansion of sin2x is $a_0+a_1x+a_2x^2+a_3x^3+\ldots$ then
A *	$a_0=0, a_1=-2$, $a_2=1$
B *	$a_0=0, a_1=2$, $a_2=0$
C *	$a_0=1, a_1=2$, $a_2=0$
D *	$a_0=0, a_1=-2$, $a_2=0$
E *	None of the above
Marks *	1
Answer *	b

28

Question Description *	Swastik photo frames has two employees Asif and Rasik. If Asif works alone, he can complete the work in 3 days, likewise Rasik alone can complete the work in 2 days. If Nirav who alone takes 6 days to complete the work joins them. in how many days can these three complete the work, by working together?
A *	1 day
B *	1.5 days
C *	2 days
D *	2.5 days
E *	None of the above
Marks *	1
Answer *	a

29

Question Description *	The total weight of 12 girls standing in a row is 336 kg. Two more girls weighing 24 kg and 25 kg respectively join the same row. By how much will the new average decrease from the earlier one?
A *	0.5 kg
B *	0.6 kg
C *	0.7 kg
D *	0.8 kg
E *	None of the above
Marks *	1
Answer *	a

30	Question Description *	A man purchased 500 ml each of coconut oil, groundnut oil and mustard oil. The price of 500 ml of coconut oil was Rs. 60 more that that of groundnut oil and the price of 500 ml of groundnut oil was Rs. 40 more than mustard oil. What will be the price of 500 ml groundnut oil, if the total cost of all three oils (of 500 ml each) is Rs. 710/-?
	A *	Rs. 200/-
	B *	Rs. 210/-
	C *	Rs. 220/-
	D *	Rs. 230/-
	E *	None of the above
	Marks *	1
	Answer *	d

31		
	Question Description *	**A word/number arrangement machine when given an input line of word/numbers rearranges them following a particular rule. The following is an illustration of input and rearrangement.** **INPUT: Rice 60 Wheat 25 Barley 10 Corn 40 Oats 70 Millet 50** **Step 1: 10 Rice 60 Wheat 25 Corn 40 Oats 70 Millet 50 Barley** **Step 2: 10 25 Rice 60 Wheat 40 Oats 70 Millet 50 Barley Corn** **Step 3: 10 25 40 Rice 60 Wheat Oats 70 50 Barley Corn Millet** **Step 4: 10 25 40 50 Rice 60 Wheat 70 Barley Corn Millet Oats** **Step 5: 10 25 40 50 60 Wheat 70 Barley Corn Millet Oats Rice** **Step 6: 10 25 40 50 60 70 Barley Corn Millet Oats Rice Wheat** Step 6 is the last step of the rearrangements, Based on the following logic rearrange the given input and answer the following question: **For the given input: Honda 42 Toyota 17 Ford 63 Kia 29 BMW 55 Audi 38** **Question:** What is the sum of the numbers that are towards the left of "Honda" in step III?
	A *	102
	B *	84
	C *	126
	D *	98
	E *	None of the above
	Marks *	1
	Answer *	b

32

Question Description *	You are given two statements, followed by two conclusions (numbered 1 and 2). Assume the statements are true, even if they don't seem to match real-life facts. Read the conclusions and decide which one(s) logically follow from the given statements. **Statements:** 1. All athletes are disciplined. 2. No disciplined person is lazy. 3. Some lazy people are talented. **Conclusions:** 1. No athlete is lazy. 2. Some talented people are not disciplined.
A *	Only conclusion 1 follows
B *	Only conclusion 2 follows
C *	Either conclusion 1 or conclusion 2 follows
D *	Both conclusion 1 and 2 follows
E *	None of the above
Marks *	1
Answer *	a

33

Question Description *	If A+B means A is the brother of B, A-B means A is the sister of B, AXB means A is the father of B and $A \div B$ means A is the mother of B, then which of the following means P is the mother of T ?
A *	$P \div Q \times R + T$
B *	$T + R \times Q \div P$
C *	$P \times Q \div T + R$
D *	$P \div Q + R \times T$
E *	None of the above
Marks *	1
Answer *	e

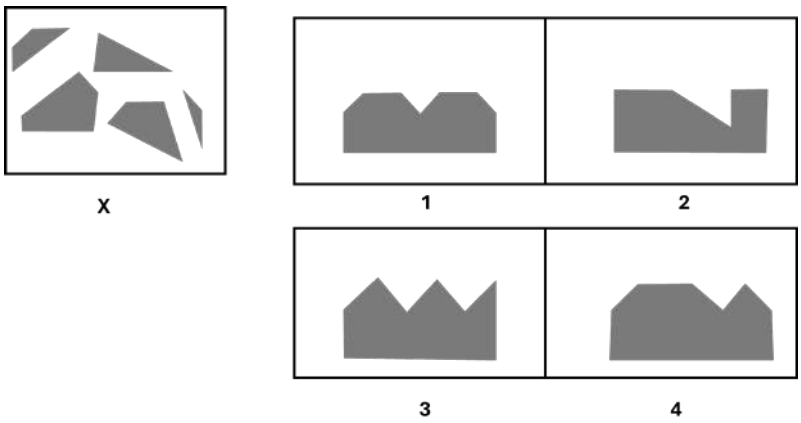
34

Question Description *	A solid cuboid has dimensions 12 cm (length) × 10 cm (width) × 8 cm (height). Each face of the cuboid is painted a different color: Top face (12 cm × 10 cm) is painted Red Bottom face (12 cm × 10 cm) is painted Blue Front face (12 cm × 8 cm) is painted Green Back face (12 cm × 8 cm) is painted Yellow Left face (10 cm × 8 cm) is painted Orange Right face (10 cm × 8 cm) is painted Purple The cuboid is then cut into smaller cubes, each of side 2 cm. Find the number of smaller cubes with exactly two colors on it but none of them is green or yellow.
A *	8
B *	16
C *	12
D *	4
E *	None of the above
Marks *	1
Answer *	c

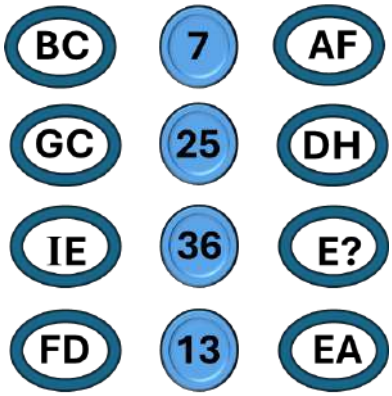
35

Question Description *	Arrange the words given below in a meaningful sequence. 1. Taxiing to Runway 2. Thrust Generation 3. Lift-Off 4. Acceleration on Runway 5. Climb to cruise Altitude
A *	4 – 1 – 3 – 2 – 5
B *	1 – 2 – 4 – 3 – 5
C *	4 – 3 – 2 – 1 – 5
D *	1 – 4 – 2 – 5 – 3
E *	None of the above
Marks *	1
Answer *	b

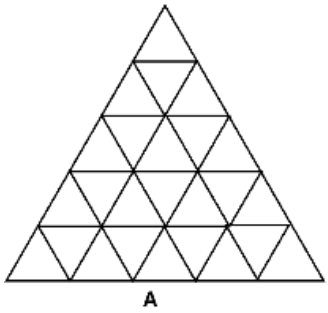
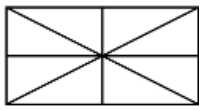
36

Question Description *	Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X). 
A *	2
B *	1
C *	3
D *	4
E *	None of the above
Marks *	1
Answer *	b

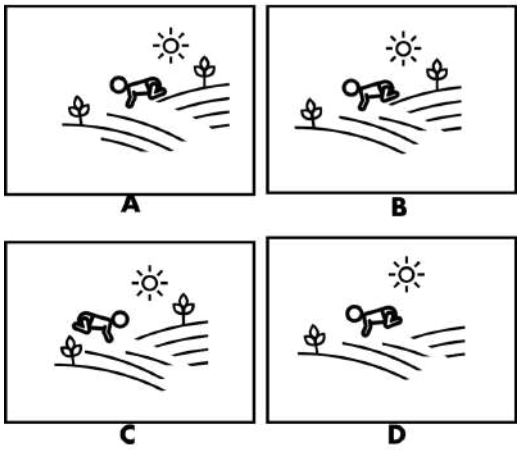
37

Question Description *	Which alphabet will come in place of the question mark ? 
A *	A
B *	I
C *	L
D *	C
E *	None of the above
Marks *	1
Answer *	b

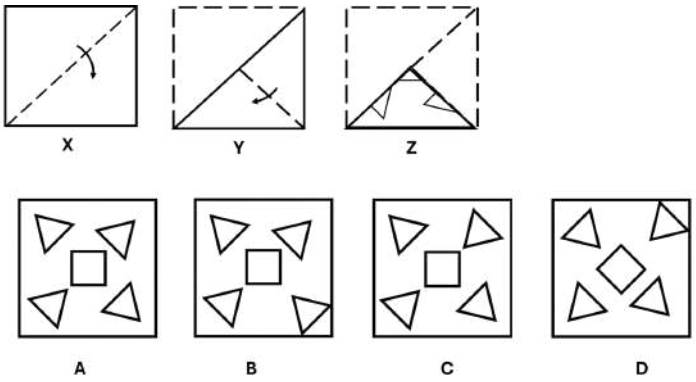
38

Question Description *	What is the sum of all the triangles found in figure A and figure B?  A  B
A *	48
B *	60
C *	16
D *	70
E *	None of the above
Marks *	1
Answer *	e

39

Question Description *	Choose the alternative which resembles the mirror image of the following image.  
A *	A
B *	C
C *	B
D *	D
E *	None of the above
Marks *	1
Answer *	c

40

Question Description *	Choose a figure which would most closely resemble the unfolded form of Figure Z 
A *	D
B *	C
C *	B
D *	A
E *	None of the above
Marks *	1
Answer *	b

41

Question Description *	The thickness of a boiler plate is 25 mm. The rivet diameter (in mm) will be
A *	20 mm
B *	30 mm
C *	40 mm
D *	50 mm
E *	None of the above
Marks *	1
Answer *	b

42

Question Description *	Which of the following screw thread is used for power transmission in one direction only?
A *	Square Threads
B *	Multiple Threads
C *	Acme Threads
D *	Buttress Threads
E *	None of the above
Marks *	1
Answer *	d

43

Question Description *	If Poisson's ratio of a material is 0.5, then the elastic modulus for the material is
A *	three times its shear modulus
B *	four times its shear modulus
C *	equal to its shear modulus
D *	indeterminate
E *	None of the above
Marks *	1
Answer *	a

44

Question Description *	A body floating in a liquid is in a stable state of equilibrium if its:
A *	metacentre lies below its centre of gravity
B *	metacentre lies above its centre of gravity
C *	metacentre coincides centre of gravity
D *	Independent of metacenter position
E *	None of the above
Marks *	1
Answer *	b

45

Question Description *	Pitot-tube is used to measure
A *	Discharge
B *	Average velocity
C *	Velocity at a point
D *	Pressure at a point
E *	None of the above
Marks *	1
Answer *	c

46

Question Description *	Laminar sublayer can develop during flow over a flat plate. It exists in
A *	laminar zone
B *	transition zone
C *	turbulent zone
D *	laminar and transition zones
E *	None of the above
Marks *	1
Answer *	c

47

Question Description *	Taylor's tool life equation is expressed as
A *	$V T^n = C$
B *	$V^n T = C$
C *	$V / T^n = C$
D *	$V^n / T = C$
E *	None of the above
Marks *	1
Answer *	a

48

Question Description *	Wear allowance is provided on
A *	Go Gauge
B *	No-Go Gauge
C *	Both A and B
D *	In combination gauge
E *	None of the above
Marks *	1
Answer *	a

49

Question Description *	The use of regenerator in a gas turbine cycle
A *	increases efficiency but has no effect on output
B *	increases output but has no effect on efficiency
C *	increases both efficiency and output
D *	increases efficiency but decreases output
E *	None of the above
Marks *	1
Answer *	a

50

Question Description *	By what process, maximum hardness is obtained for a component made of steel?
A *	Cyaniding
B *	Nitriding
C *	Carburizing
D *	All of the above
E *	None of the above
Marks *	1
Answer *	b

51

Question Description *	Thermodynamic work is the product of
A *	two intensive properties
B *	two extensive properties
C *	an intensive property and change in an extensive property
D *	an extensive property and change in an intensive property
E *	None of the above
Marks *	1
Answer *	c

52

Question Description *	Which amongst the following constitutes a higher pair?
A *	Belt and pulley
B *	Turning pair
C *	Screw pair
D *	Sliding pair
E *	None of the above
Marks *	1
Answer *	a

53

Question Description *	Maximum bending moment in a cantilever beam with uniformly distributed load (w /unit length) over whole length ‘L’ is
A *	wL^2
B *	$(wL^2)/2$
C *	$(wL^2)/4$
D *	$(wL^2)/6$
E *	None of the above
Marks *	1
Answer *	b

54

Question Description *	When a maximization assignment problem is converted in minimization problem, the resulting matrix is called matrix.
A *	cost
B *	regret
C *	profit
D *	dummy
E *	None of the above
Marks *	1
Answer *	b

55

Question Description *	It is **IMPOSSIBLE** for the entropy of an isolated system to:
A *	Be zero
B *	Increase
C *	Be static
D *	Decrease
E *	None of the above
Marks *	1
Answer *	d

56

Question Description *	The divergence of the vector field $3xz\ i + 2xy\ j — yz^2k$ at a point (1,1,1) is equal to
A *	7
B *	4
C *	3
D *	0
E *	None of the above
Marks *	1
Answer *	c

57

Question Description *	A wall with two layers of thickness T_1 and T_2 and conductivities K_1 and K_2 are exposed to temperature of 1300°C and 30°C. If the interface temperature between the layers is 1200°C and $K_1/K_2=3$, then T_1/T_2=?
A *	0.256
B *	0.38
C *	0.31
D *	0.22
E *	None of the above
Marks *	1
Answer *	a

58

Question Description *	Oil weight density=8.5 kN/m^3 is present in a tank up to a depth of 6m. It is observed that an immiscible liquid, with a depth of 2 m, is present in the tank below the oil. The reading on the pressure gauge connected to the tank's bottom is 70kPa. The specific gravity of the immiscible liquid is: (assume g =9.81m/s^2)
A *	0.982
B *	0.968
C *	0.873
D *	0.893
E *	None of the above
Marks *	1
Answer *	b

59

Question Description *	The matrix $\begin{pmatrix} 1 & 2 & 4 \\ 3 & 0 & 6 \\ 1 & 1 & p \end{pmatrix}$ has one eigenvalue equal to 3. The sum of the other two eigenvalues is
A *	P
B *	$P - 1$
C *	$P - 2$
D *	$P - 3$
E *	None of the above
Marks *	1
Answer *	c

60

Question Description *	Given a function φ = $\frac{1}{2}(x^2+y^2+z^2)$ in three dimensional Cartesian space, the value of the surface integral $\oiint \hat{n}.\nabla\varphi\, dS$, where S is the surface of a sphere of unit radius and $\hat{n}$ is the outward unit normal vector on S is,
A *	4π
B *	3π
C *	4π/3
D *	0
E *	None of the above
Marks *	1
Answer *	a

61

Question Description *	The divergence of a magnetic field is
A *	1
B *	2
C *	0
D *	∞
E *	None of the above
Marks *	1
Answer *	c

62

Question Description *	Which of the following factors affect the capacitance of a parallel plate capacitor?
A *	Surface area of the plates
B *	Spacing between the plates
C *	Permittivity of the material in between
D *	All of the above
E *	None of the above
Marks *	1
Answer *	d

63

Question Description *	The number of pilot wires required for protecting 3 phase transmission lines using Translay system of protection is
A *	6
B *	4
C *	3
D *	2
E *	None of the above
Marks *	1
Answer *	d

64

Question Description *	The overvoltage protection implies
A *	Limit the voltage across sensitive insulation
B *	Divert the surge current away from the load
C *	Block the surge current entering into the load
D *	All of the above
E *	None of the above
Marks *	1
Answer *	d

65

Question Description *	Which is not an example of convection current?
A *	A moving charged belt
B *	Electron movement in a vacuum tube
C *	An electron beam in a television tube
D *	Electric current in a copper wire
E *	None of the above
Marks *	1
Answer *	d

66

Question Description *	For successful parallel operation of two single phase transformers the most crucial condition is that their
A *	Percentage impedances are equal
B *	Polarities are properly connected
C *	Turns ratios are exactly equal
D *	KVA ratings are equal
E *	None of the above
Marks *	1
Answer *	b

67

Question Description *	Swinburne’s test is a no-load test for
A *	DC shunt motor
B *	DC series motor
C *	Both of the above
D *	Transformers
E *	None of the above
Marks *	1
Answer *	a

68

Question Description *	In a wind energy conversion system, transmission mechanism and the generator are accommodated by
A *	Rotor
B *	Tower
C *	Nacelle
D *	Turbine
E *	None of the above
Marks *	1
Answer *	c

69

Question Description *	The impulse response of a causal system is
A *	0 for t > 0
B *	0 for t < 0
C *	0 at t=0
D *	Constant
E *	None of the above
Marks *	1
Answer *	b

70

Question Description *	Speed of dc motor drives can be controlled by
A *	Armature voltage
B *	Field flux
C *	Armature resistance
D *	All of the above
E *	None of the above
Marks *	1
Answer *	d

71

Question Description *	A 50 Hz overhead line has line to earth capacitance of 1μF. For an earth fault neutralizer, the reactance required to neutralize the capacitance of 100% of the length of the line is
A *	1326 ohms
B *	1179 ohms
C *	1061 ohms
D *	2061 ohms
E *	None of the above
Marks *	1
Answer *	c

72

Question Description *	The relation between A, B, C, D constants of the transmission line is
A *	AB - CD = 1
B *	AC - BD = 1
C *	AD – BC = 1
D *	All of the above
E *	None of the above
Marks *	1
Answer *	c

73

Question Description *	Consider a system with characteristic equation . The range of value of K, for which the system is stable
A *	0 < K < 1
B *	K > 1
C *	K < 0
D *	K =1
E *	None of the above
Marks *	1
Answer *	e

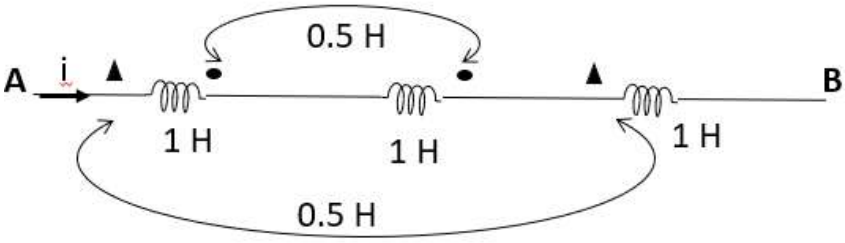
74

Question Description *	Ferroresonant transformers have
A *	Constant voltage loads
B *	Low power loads
C *	The ability to handle voltage sag conditions
D *	All of the above
E *	None of the above
Marks *	1
Answer *	d

75

Question Description *	For a lossy transmission line, the characteristics impedance does not depend on
A *	Operating frequency
B *	Length of the line
C *	Conductivity of the conductors
D *	All of the above
E *	None of the above
Marks *	1
Answer *	b

76

Question Description *	Compute the total inductance between A and B for the below coupled circuit. The self and mutual inductances with dot convention is given as below: 
A *	2 H
B *	3 H
C *	4 H
D *	5 H
E *	None of the above
Marks *	1
Answer *	d

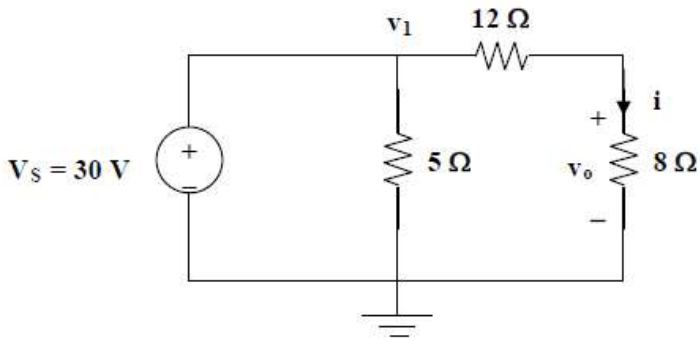
77

Question Description *	A 4 pole synchronous generator driven at 1500 rpm feeds a 6 pole induction motor, which is loaded to run at a slip rate of 5%. The motor speed equals to
A *	800 rpm
B *	850 rpm
C *	900 rpm
D *	950 rpm
E *	None of the above
Marks *	1
Answer *	d

78

Question Description *	The total core loss of a specimen of silicon steel is found to be 1500 W at 50 Hz. Keeping the flux density constant loss becomes 3000 W when the frequency is raised to 75 Hz. The eddy current loss at 50 Hz and 75 Hz respectively equal to
A *	1000 W and 2250 W
B *	2000 W and 3000 W
C *	1500 W and 2000 W
D *	2000 W and 2500 W
E *	None of the above
Marks *	1
Answer *	a

79

Question Description *	The value of in the following circuit equals to 
A *	6V
B *	16V
C *	26V
D *	36V
E *	None of the above
Marks *	1
Answer *	b (This question was marked invalid.)

80

Question Description *	The efficiency of a 1000 kVA, 100/200 V transformer at 0.9 pf leading is 90%. The total losses are
A *	100 W
B *	200 W
C *	300 W
D *	400 W
E *	None of the above
Marks *	1
Answer *	a