University of Mumbai
Examination 2020 under cluster 5 (APSIT)

Program: F.E.ALL
Curriculum Scheme: Rev12
Examination: First Year Semester I
Course Code: FEC 105 and Course Name: Basic Electrical and Electronics Engineering
Time: 1 hour Max. Marks: 50

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For the students:- All the Questions are compulsory and carry equal marks .

Q1.	The form factor of a sine wave is
Option A:	1.01
Option B:	1.11
Option C:	1.21
Option D:	100
Q2.	Kirchoff 's voltage law is applicable to
Option A:	Any closed path
Option B:	Any node
Option C:	Every branch
Option D:	Passive network
Q3.	The efficiency of a given transformer is maximum when
Option A:	it runs at half full load
Option B:	it runs at full load
Option C:	its Copper loss equals iron loss
Option D:	it runs at 0.8 power factor
Q4.	The period of a certain sine wave is 10 milliseconds its frequency is
Option A:	10MHz
Option B:	10kHz
Option C:	10 Hz
Option D:	100Hz
Q5.	The reverse current in a diode is of the order of …….
Option A:	kA
Option B:	mA
Option C:	µA
Option D:	A
Q6.	An ideal current source has
Option A:	zero internal resistance
Option B:	infinite internal resistance
Option C:	low value of voltage
Option D:	large value of current
Q7.	The main purpose of performing open-circuit test on a transformer is to measure its
Option A:	Copper loss
Option B:	Core loss

Option C:	Total loss
Option D:	Insulation resistance
Q8.	The distance occupied by one complete cycle of the wave is called its
Option A:	Time period
Option B:	Wavelength
Option C:	Velocity
Option D:	Frequency
Q9.	In a 3 phase 4 wire balanced system the neutral current is _____
Option A:	Zero
Option B:	dependent on load
Option C:	dependent on line voltage
Option D:	determined by load power factor
Q10.	A current source of 15A and 3 ohm parallel resistance is equivalent to a voltage source of _____volt and 3ohm series resistor
Option A:	5
Option B:	45
Option C:	10
Option D:	30
Q11.	The RMS value of a sine wave of maximum value 10A equals a DC current of _____ampere
Option A:	7.07
Option B:	6.37
Option C:	5
Option D:	5.77
Q12.	Maxwell's loop current method of solving electrical networks
Option A:	uses branch current
Option B:	utilizes kirchhoff 's voltage law
Option C:	is confined to single loop circuits
Option D:	is a network reduction method
Q13.	A 200/400V single phase transformer draws a primary current of 25 A at 0.8 p.f. Lag the secondary kVA
Option A:	5kVA
Option B:	4kVA
Option C:	10kVA
Option D:	8kVA
Q14.	In the two wattmeter method of measuring power in 3phase circuits one of the wattmeters read zero when power factor is
Option A:	Unity
Option B:	0.866

Option C:	0.5
Option D:	0.4
Q15.	Nodal analysis depends on
Option A:	applying KVL
Option B:	selecting reference node
Option C:	comparing node voltages
Option D:	using minimum number of equations
Q16.	A Three phase star connected symmetrical load consumes P watts of power from a balanced supply if same load is connected in delta to the same supply the power consumption will be
Option A:	P
Option B:	3P
Option C:	P/3
Option D:	2P
Q17.	Superposition theorem is meant for solving _____circuits
Option A:	Linear
Option B:	Non linear
Option C:	non resistive
Option D:	Simple
Q18.	The value of a sinusoidal voltage with peak-to-peak value of 240 volt is _____volt.
Option A:	84.84
Option B:	77.82
Option C:	94.68
Option D:	89.15
Q19.	Thevenin's theorem reduce any complex linear circuit to a
Option A:	voltage source with a series resistance
Option B:	communication networks
Option C:	simple series circuit
Option D:	parallel circuit
Q20.	A single-phase full wave mid-point type diode rectifier requires _____ number of diodes whereas bridge type requires _____
Option A:	1,2
Option B:	2,4
Option C:	3,2
Option D:	3,1
Q21.	According to MPT theorem, power transferred to a load resistance R_L is maximum when
Option A:	$R_L<R_{TH}$

Option B:	$R_L > R_{TH}$
Option C:	$R_L = R_{TH}$
Option D:	$R_L = 2R_{TH}$
Q22.	The phase difference between sinusoidal voltage and current in a pure capacitor
Option A:	is 90 degree
Option B:	depends on the value of C
Option C:	increases with frequency
Option D:	is 45 degree
Q23.	The average power in a pure inductive or capacitive circuit
Option A:	depends on X_L
Option B:	depends on X_C
Option C:	is zero
Option D:	is positive
Q24.	In three phase system the emf are _____apart.
Option A:	30 degree
Option B:	60 degree
Option C:	90 degree
Option D:	120 degree
Q25.	Transformer core is laminated in order to
Option A:	reduce eddy current loss
Option B:	reduce hysteresis loss
Option C:	reduce weight of steel
Option D:	improve cooling