MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B.Tech. (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : APE 232 **Title** : Heat and Mass Transfer
Credits : 3 (2+1)
Day & Date : Friday, 21-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 80

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 a) Give the analogies between heat, mass and momentum transfer. (5)

b) Derive an equation for rate of heat transfer for radial heat conduction through tubes. (5)

Q.2 a) State in brief about the optimum thickness of insulation for pipes. (5)

b) A steam pipe is covered with two layers of insulation. The inner layer is 30 mm thick and the outer one is 50mm thick. The thermal conductivities of insulating materials are 0.17 and 0.023 W/m K, respectively. The pipe is made of steel (k= 58 W/m K) and has inner and outer diameter of 160 and 170 mm, respectively. The temperature of steam is 300^0C and the ambient air is at 50^0C. If the inside and outside film coefficients are 30 and 5.8 W/m^2 K, respectively, calculate the heat lost per unit length of pipe. (5)

Q.3 a) Derive the relation for logarithmic mean temperature difference (LMTD) for counter flow type of heat exchanger. (5)

b) Find the overall coefficient of heat transfer between water and oil if the water flows through a copper pipe 1.8 cm ID and 2.1 cm OD while the oil flows through the annulus between this pipe and a steel pipe. The water and oil side film coefficients are 4650 and 1280 W/m K. The fouling factors on the water and oil sides may be taken to be 0.000344 and 0.00086, respectively. The thermal conductivity of the tube wall is 349 W/m K. (5)

Q.4 A small body at 27^0C is placed in a large furnace whose walls are maintained at 1000K. The total absorptivity of the body at 27^0C varies with temperature of the incident radiation as follows: (10)

Temperature, K :	300	500	1000
α :	0.75	0.6	0.5

Determine the rate of absorption and emission of radiation by the small body.

Q.5 Differentiate between (ANY TWO). (10)

1) Conduction and radiation
2) Boiling and condensation
3) Thermal conductivity and thermal diffusivity

Q.6 Write short notes on (ANY TWO). (10)

1) Newton's law of cooling 2) Fick's law of diffusion.
3) Extended surfaces

Q.7 a) State and explain in short the Stefan-Boltzmann law. (5)

b) What is emissivity? Explain in brief the different types of emissivities. (5)

(P.T.O.)

SECTION "B"

Q.8 Define the following. (10)

1) Conduction
2) Convection
3) Radiation
4) Radiation density
5) Black body
6) Periodic heat transfer
7) Transmissivity
8) Unsteady state heat transfer
9) Opaque body
10) Fouling factor

Q.9 State true or false. (10)

1) Specific heat, coefficient of viscosity and thermal conductivity are related by Schmidt number.
2) Thermal conductivity of an alloy is much more as compared to the value for any of its constituents.
3) Overall coefficient of heat transfer is determined by an equation $Q=UA \Delta t$
4) The composite wall is made of several homogeneous layers.
5) In counter flow heat exchanger, the fluid moves in opposite direction to each other.
6) In condensation, the phase changes from liquid to vapour.
7) $\rho VD/\mu$ is called as Grashof number.
8) Reynold's number lies between 2100 to 10^4 in transient region.
9) $q= -KA (dt/dx)$ is called as Newton's law.
10) The fraction of the incident radiation absorbed is called the reflectivity,

Q.10 Fill in the blanks. (10)

1) Conduction heat transfer is quantified by _____ law.
2) The value of emissivity for black body is _____.
3) _____ is a device for transferring heat from a hot stream of fluid to a cold stream.
4) Conduction heat transfer occurs only in_____.
5) Stefan Boltzman law governs_____ heat transfer.
6) In case of flow through pipe for laminar flow, Re < _____.
7) Grashoff's number = _____.
8) Prandtl number =_____.
9) In boiling, phase changes from liquid to _____.
10) Mass transfer occurs due to gradient in_____.

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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B. Tech. (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : BS MATH 235 **Title** : Mathematics - III
Credits : 3 (2+1)
Day & Date : Monday, 17-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 120

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 a) Show that the function $f(z) = e^x (\cos y + i \sin y)$ is analytic. (5)

b) Find the laplace transform of (10)

1) $te^{-t} \sin t$ 2) $\frac{\sin t \cos t}{t}$

Q.2 a) Find the fourier series of $f(x) = x^3$ in the interval $[-\pi, \pi]$ (5)

b) Find inverse laplace transform of (10)

1) $\frac{6}{(s+2)(s-4)}$ 2) $\log \left[\frac{s+a}{s+b}\right]$

Q.3 a) Solve the difference equation, $y_{n+2} + y_{n+1} - 6y_n = 0$ (5)

b) Solve the initial value problem by using laplace transformation, (10)

$y'' + 2y' + y = e^{-t}$; $y(0) = -1$, $y'(0) = 1$

Q.4 a) Find cube root of $z = 1 + i$ by De Moivre's theorem (5)

b) Solve the difference equation $y_{n+1} - 3y_n = n^2 2^n$ (10)

Q.5 a) Determine the value of a,b,c, d so that the function (5)

$f(z) = x^2 + axy + by^2 + i(cx^2 + dxy + y^2)$ is analytic.

b) Find the fourier cosine series as well as fourier sine series of (10)

$f(x) = \pi - x$, $0 < x < \pi$

Q.6 a) State and prove De Moivre's theorem (10)

b) find fourier series of $f(x) = \begin{cases} -2x, if -\pi < x < 0 \\ 2x, if 0 < x < \pi \end{cases}$ (5)

Q.7 a) State and prove Cauchy Reiman equation in Cartesian form. (10)

b) Solve $y_{n+2} - 4y_n = 9n^2$ (5)

(P.T.O.)

SECTION "B"

Q.8 Fill in the blanks. (15)

1) $L[e^{-t}] =$ _____, $L[t^2] =$ _____, $L[te^t] =$ _____.

2) $L^{-1}\left[\frac{s}{s^2+1}\right] =$ _____, $L^{-1}\left[\frac{2}{s-2}\right] =$ _____, $L^{-1}\left[\frac{1}{s^3}\right] =$ _____.

3) $\Delta y_n =$ _____, $\Delta^2 y_n =$ _____, $\Delta^3 y_n =$ _____.

4) If $z=2+3i$, then

$|z| =$ _____, $\theta =$ _____, $\arg(z) =$ _____.

5) Let $f(x)$ be a periodic function defined on $[c, c+2\pi]$ then the fourier series of $f(x)$ is $f(x) = a_0/2 + \Sigma (a_n \cos nx + b_n \sin nx)$

Where $a_0 =$ _____

$a_n =$ _____

$b_n =$ _____

Q.9 State/ Define. (15)

1) Convolution theorem.

2) Dirichlet's conditions.

3) Forward, backward, and central difference.

4) First shifting property of laplace transform.

5) Conjugate, modulus, argument of a complex number.

Q.10 State true or false, if false correct and rewrite it. (15)

1) Fourier expansion of an even function does not contain the a_0 term.

2) $\arg.(z_1 z_2 z_3) = \arg.(z_1) + \arg.(z_2) + \arg.(z_3)$

3) The homogeneous equation of first order & first degree is always exact.

4) $L(1+2t) = 1/s + 4/s^2$

5) A particular solution of a differential equation does not contain arbitrary constant.

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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B.Tech (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : FMP 235 **Title** : Farm Power
Credits : 3 (2+1)
Day & Date : Tuesday, 25-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 80

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 a) Explain the working principle of four stroke cycle engine. (5)

b) Give the comparison between Diesel and Petrol engine. (5)

Q.2 a) A diesel engine has a stroke length of 25 cm and cylinder diameter of 15 cm. The clearance volume is 400 cubic cm. Fuel injection takes place at constant pressure for 5% of the stroke. Find the efficiency of the engine. (5)

b) Calculate the compression ratio and clearance volume of an engine whose dimensions 100 X 120 mm and the length of clearance space at the top dead center being 8 mm. (5)

Q.3 a) Explain the valve timing diagram of four stroke engine with neat sketch. (5)

b) Explain the oil bath air cleaner with the help of neat sketch. (5)

Q.4 a) What is carburetion? Explain various components of carburetor. (5)

b) Explain pressure feed type engine lubrication system with neat sketch. (5)

Q.5 a) Explain the battery ignition system of S.I. engine with the help of neat sketch. (5)

b) Give the classification of tractors and explain each in brief. (5)

Q.6 a) Explain working of single plate clutch system. (5)

b) What are different types of brakes? Explain external contracting shoe brake. (5)

Q.7 a) Explain the principle of operation of differential system. (5)

b) What is the necessity of cooling system in I.C. engine? Explain thermo-siphon water cooling system. (5)

SECTION "B"

Q.8 Fill in the blanks. (10)

1) In case of engine based on Otto cycle, heat addition is done at _____.
2) The calorific value of diesel fuel is _____.
3) The complete path of power form engine to the wheels of tractor is called as _____.
4) In case of carburetor, constriction in the induction pipe is called as _____.
5) For a battery in fully charged condition, specific gravity of electrolyte is _____.

(P.T.O.)

6) Standard thermostat valves are designed to start opening at _____ ^{0}C for diesel engine.

7) _____ is the quantity of fuel consumed by an engine on the basis of per brake horse power hour.

8) The spark gap settings of spark plug are kept between_____ and _____ mm.

9) _____ number denotes the antiknock quality of diesel fuel.

10) _____ is attached to the piston at one end and to crank shaft at the other end.

Q.9 State true or false (10)

1) Spark plug is the essential part of compression ignition engine.

2) The gear pump in the lubrication system generally develops a pressure of 3 Kg/cm^2

3) Calorific value of petrol is more than diesel.

4) With increase in pressure by 4 psi, the boiling temperature of water increases to 225^{0}F.

5) Master cylinder is the important part of hydraulic brake.

6) In case of synchromesh gearbox, synchronizer equalizes the speed of mating parts after they engage.

7) The compression ratio of diesel engine varies from 14:1 to 22:1.

8) In case of two stroke engine, size of flywheel is comparatively smaller than that of a four stroke engine.

9) In case of dry type air cleaner, the incoming air impinges upon the surface of oil kept in container.

10) Governor used on tractor engine is called variable speed governor.

Q.10 Match the pairs. (10)

"A"	"B"
1) Removal of exhaust gases	a) 240^0
2) Compression pressure of CI engine	b) Scavenging
3) Water pump	c) 180^0
4) Carburetor	d) 30-45 Kg/cm^2
5) Firing interval of 3 cylinder 4 stroke engine	e) Forced circulation type cooling system
6) Stroke-Bore ratio of tractor engine	f) 0.8 mm
7) Diameter of secondary winding wire	g) Diaphragm
8) Diameter of primary winding wire	h) Spark ignition engine
9) Firing interval of 4 cylinder 4 stroke engine	i) 1.25
10) Pneumatic governor	j) 0.1 mm

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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B.Tech (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : BS STAT 236 **Title** : Statistics
Credits : 2 (1+1)
Day & Date : Tuesday, 18-10-2005 **Time** : 9-00 to 11-00 **Total Marks** : 40

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 Define Measures of central tendency and explain its important measures.

Q.2 What is regression equation? Write the properties of regression coefficient.

Q.3 Write types of t-test. Explain detailed procedure of t-test for testing of hypothesis.

Q.4 What is probability and probability distribution? State normal distribution and it's properties.

Q.5 State method of studying dispersion. Write properties of a good measure of dispersion.

Q.6 What are the types of Correlation and explain their properties.

Q.7 Write short notes on (ANY TWO).

1) Non Linear Regression 2) Testing of Hypothesis 3) Chi Square test.

SECTION "B"

Q.8 Write the formulae with specification used.

1) Mean deviation
2) Range
3) Karl Pearson coefficient of correlation
4) Mean
5) Intercept.

Q.9 Fill in the blanks.

1) Mean and variance are equal in _____ distribution.
2) Two regression lines coincide when _____.
3) F- test applied for testing of equality of _____.
4) Temperature of the patient is a _____ variate.
5) Standard deviation of sampling distribution is known as _____.

Q.10 State true or false.

1) Value of Standard deviation could be negative.
2) Coefficient of correlation means two regression coefficient.
3) The sum of square deviations of items from arithmetic mean is zero.
4) Colour is quantitative character.
5) Mean is badly affected by extreme observations.

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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B.Tech. (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : AG CHEM 235 **Title** : Food Science
Credits : 3 (2+1)
Day & Date : Wednesday, 19-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 80

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 a) Define polysaccharides. Classify them on the basis of composition with suitable examples.

b) Define vitamins. List out fat soluble vitamins. State major diseases caused due to deficiency of each of them.

Q.2 a) What are fatty acids? How they are classified based on degree of unsaturation?

b) Define the term milk. State the factors affecting the composition of milk.

Q.3 a) What are enzymes? Explain the mechanism of enzyme action.

b) What is sterilization? Write about common spoilage occurring in milk and milk products.

Q.4 a) Define ripening of fruit. State general changes associated with ripening. Explain the hydrolytic changes during ripening of fruits.

b) Define the term essential oils. Enlist different methods of extraction of essential oils and explain any one.

Q.5 a) What are proteins? Classify them based on composition with suitable examples under each class.

b) Define the nucleic acids. Explain the Watson and Crick model of DNA with the help of diagram.

Q.6 a) What is food? Enlist the methods of preservation of foods.

b) Define the term seed germination. State hormonic changes during seed germination.

Q.7 Write short notes on (ANY TWO).

1) Cheese and Ice- cream
2) Microbial spoilage of foods
3) Essential Amino acids
4) Fats and oils

SECTION "B"

Q.8 Correct the following.

1) Rancidity occurs less frequently in animal fats as compared to plant fat.
2) The deficiency disorder of vitamin 'A' is scurvy disease.
3) Proteins are also called glycans.
4) Tryptophan is a sulphur containing amino acid.
5) Butter is the cheapest source of casein and milk fat.

(P.T.O.)

6) The most characteristic symptom of Vitamin-E deficiency in the childhood disease is known as rickets.

7) All monosaccharides are non reducing sugars.

8) Nucleotides are compounds in which nitrogenous bases are conjugated to the pentose sugar.

9) Sterilization is a heat treatment below 100^0C and that kills part but not all microorganisms present in the milk.

10) Vanaspati sold in market is dehydrogenated oil.

Q.9 Define the following terms.

1) Mutarotation	2) Oligosaccharides	3) Non reducing sugar
4) Apoenzyme	5) Polypeptide	6) Bacteria
7) Essential fatty acids	8) Asymmetric carbon	9) Yeast
10) Pasteurization		

Q.10 Match the pairs

"A"	"B"
1) Lipase	a) Protein
2) Thymine	b) Basic amino acid
3) Cysteine	c) Amylose
4) Uracil	d) Enzyme
5) Stachyose	e) Antisterility
6) Haemoglobin	f) DNA
7) Vitamin K	g) Ripening hormone
8) Starch	h) Tetrasaccharide
9) Ethylene	i) Sulphur containing amino acid
10) Arginine	j) RNA
	k) Antihaemorrhagic

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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, DAPOLI

SEMESTER END EXAMINATION

B.Tech (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : AG ECON 236 **Title** : Agricultural Economics and Farm Management
Credits : 3 (2+1)
Day & Date : Saturday, 22-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 80

Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 Sate the law of demand with the help of suitable example and explain elasticity of demand.

Q.2 Define and elaborate farm management. Explain objectives and scope of Farm Management.

Q.3 Define Co-operative marketing, enlist its functions and describe type of co-operative marketing societies.

Q.4 Enlist six basic principles involved in making rational farm management decision and explain law of diminishing returns.

Q.5 What do mean by farm budgeting and its type? Enlist steps involved in complete budgeting.

Q.6 Define credit and explain types of credit according to purpose, period and security.

Q.7 Write short notes on (ANY TWO).

1) Phases in project cycle.
2) Place of agriculture in Indian Economy
3) Three regions of production function.
4) Agricultural productivity.

SECTION "B"

Q.8 Define the following.

1) Law of demand
2) Cost
3) Farm plan
4) Co-operative marketing
5) Marginal Cost
6) Goods
7) Crop yield index
8) Marketing channel
9) Agril. Economics
10) Pay Back Period (PBP)

Q.9 Fill in the blanks.

1) Demand is _____ related with price and supply is _____ related with price.
2) Market price is determined by _____ between forces of demand and supply at particular time.
3) _____creates place utility and _____ creates time utility.
4) A particular human want is _____
5) _____ may be defined as destruction of utility.

(P.T.O.)

6) Family labour income is obtained by substracting_____ from gross income.

7) The demand curve under perfect market condition is _____ straight line.

8) The investment is considered sound if the NPV is _____.

9) The pressure of population on land is _____.

10) The combined use of HYV seed, fertilizer and irrigation resulted into large increase of food grain production in India, is known as _____.

Q.10 State true or false. If false, correct it.

1) District Central Co-operative Bank is non-institutional source of farm finance.

2) Pay back period is period of repayment of interest of loan.

3) Markets for consumers' goods are less perfect.

4) The price below which seller refuse to sell his product is called as reserve price.

5) Monopolist can set the price of his product and pursue an independent price policy.

6) Under cover of a cloth (hatha system) is method of buying and selling in regulated market.

7) A farm budget is a programme of the total farm activity of a farmer drawn up in advance.

8) Returns to investment, repayment of loan and risk bearing capacity are three C's of credit used to ascertain soundness of loan proposal.

9) The pattern of agricultural holdings in India is dominated by marginal and small size holdings.

10) The incentives for increasing agricultural production are financed by both state and central governments in India.

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SEMESTER END EXAMINATION

B.Tech (Agril. Engg.)

Semester : III (New) **Academic Year** : 2005-2006
Course No. : EOES 232 **Title** : Electrical Engineering- I
Credits : 3 (2+1)
Day & Date : Monday, 24-10-2005 **Time** : 9-00 to 12-00 **Total Marks** : 80

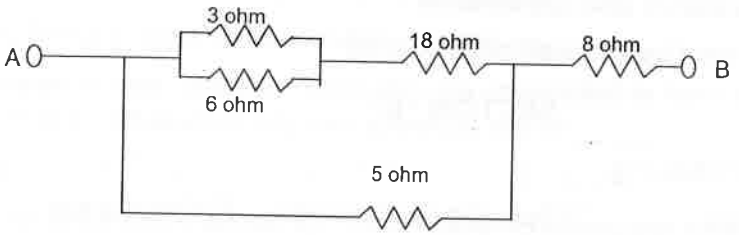
Note :
1. Solve ANY FIVE questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw net diagrams wherever necessary.
5. Make necessary assumptions wherever required.

SECTION "A"

Q.1 a) State and explain Ohm's law. (2)

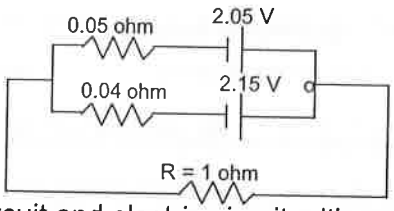
b) What is resistance? Explain in brief the effect of temperature on resistance. (3)

c) Calculate the effective resistance of the following combination of resistances and the voltage drop across each resistance when potential difference of 60 V is applied between points A and B (5)



Q.2 a) State and explain Kirchoff's current law and Kirchoff's mesh law. How the sign of voltage drop and battery emf are determined? (5)

b) By using superposition theorem, find the current in resistance R=1 Ω from the given combination. (5)



Q.3 a) Compare magnetic circuit and electric circuit with respect to similarities and differences (5)

b) A square coil of 10 cm side and 100 turns is rotated at a uniform speed of 1000 revolution per minute, about an axis at right angle to the uniform magnetic field of 0.5 Wb/m^2. Calculate the instantaneous value of the induced emf, when the plane of the coil is at i) Right angle to the field, ii) in the plane of the field. (5)

Q.4 a) What is r.m.s. value? Prove r.m.s. value of current=0.707 times maximum value of current (4)

b) A coil having resistance of 6 Ω and an inductance of 0.03 H is connected across a 50 V, 50 Hz supply, calculate (4)

1) the current 2) the phase ang le between the current
3) power factor 4) the power

c) Enlist the types of transients produced in the circuit. (2)

(P.T.O.)

Q.5 a) Derive an expression for voltages, currents and power in delta connection of polyphase circuits (6)

b) A star connected alternator supplies a delta connected load. The impedance of the load branch is (8+ j 6) ohm/phase. The line voltage is 230 V. Determine (i) current in load branch (ii) power consumed by the load (iii) power factor of load and (iv) reactive power of the load. (4)

Q.6 a) Explain the working principle of single phase transformer. (3)

b) A 25-kVA transformer has 500 turns on the primary and 50 turns on the secondary winding. The primary is connected to 3000-V, 50 Hz supply. Find the full load primary and secondary currents, the secondary emf and maximum flux in the core. Neglect leakage drops and no-load primary current. (5)

c) State All day efficiency of transformer. (2)

Q.7 Write short notes on (ANY FOUR). (10)

1) Thevenin's theorem
2) Faradays law's of electromagnetic induction
3) Generation of alternating voltage and current
4) A.C. through resistance and capacitance
5) Power measurement by two wattmeter method

SECTION "B"

Q.8 a) State the units of following. (5)

1) Electrical Energy 2) Specific conductance 3) Reluctance
4) Absolute permeability 5) Resistivity

b) Define. (5)

1) Bilateral circuit 2) Magnetomotive force 3) Form factor
4) Flux density 5) Power factor

Q.9 State true or false. (10)

1) Metals have negative temperature co-efficient of resistance.
2) The main purpose of performing open circuit test on transformer is to measure its core losses.
3) Permanent magnets are normally made of cast iron.
4) An R.L.C circuits has maximum impedance under resonant conditions.
5) Relative permeability of vacuum is one.
6) Direction of induced emf can be found out by Lenz's law.
7) Transformer works on principle of dynamically induced emf.
8) AC ammeter/voltmeter indicate the maximum value.
9) Voltage are additive for both series and parallel circuits.
10) A leading alternating quantity is one which achieve its maximum or zero value first.

Q.10 Choose the correct answer. (10)

1) Which of the following material has negative temperature co-efficient at resistance.

a) Brass b) Copper c) Aluminium d) Carbon

2) Superposition theorem can be applied only to circuits having _____ element .

a) non-linear b) passive c) Linear bilateral d) resistive

3) The magnitude of the induced emf in a conductor depends on the _____

a) amount of flux cut b) amount of flux linkages c) rate of change of flux linkages d) flux density of the magnetic field

4) Time period of a 50 Hz a.c. wave is _____

a) 0.02 sec b) 1 sec c) 0.1 sec d) none of these

5) Maximum efficiency in a transformer occurs when_____.

a) Total Cu loss = iron loss

b) Eddy current loss = hysterisis loss

c) Secondary turns = primary turns

d) Primary current = secondary current

6) Three resistances each of R ohm are connected to form a triangle. The resistance between any two terminals will be_____.

a) R b) $^3/_2$ R c) 3 R d) $^2/_3$ R

7) The force experienced by current carrying conductor lying parallel to a magnetic field is _____.

a) BIL b) BIL Sin θ c) Hil d) Zero

8) Susceptibility of magnetic materials depend on _____.

a) intensity of magnetization b) magnetizing force

c) mass of the material d) both (a) & (b)

9) An a.c current given by I=14.14Sin (∞ t + π /6) has rms value of _____ amperes

a) 10 b) 14.14 c) 1.96 d) 7.07

10) The voltage induced in the three windings of a 3 phase alternator are _____ degree apart in time phase

a) 120 b) 60 c) 90 d) 30

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