CBCS SCHEME

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17MAT31

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Engineering Mathematics – III

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Find the Fourier series expansion for the periodic function f(x), if in one second

$$f(x)=\begin{cases}0; & -\pi<x<0\\ x; & 0<x<\pi\end{cases}.$$ **(08 Marks)**

b. Expand the function $f(x) = x(\pi - x)$ over the interval $(0, \pi)$ in half range Fourier cosine series. **(06 Marks)**

c. The following value of function y gives the displacement in inches of a certain machine part for rotations x of a flywheel. Expand y-in terms of Fourier series upto the second harmonic.

Rotations	x	0	π/6	2π/6	3π/6	4π/6	5π/6	π
Displacement	y	0	9.2	14.4	17.8	17.3	11.7	0

(06 Marks)

OR

2 a. Find the Fourier series expansion for the function :

$$f(x)=\begin{cases}\pi x; & 0\le x\le 1\\ \pi(2-x); & 1\le x\le 2\end{cases}$$

and deduce $\frac{\pi^2}{8}=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^2}$. **(08 Marks)**

b. Expand in Fourier series $f(x) = (\pi - x)^2$ over the interval $0 \le x \le 2\pi$. **(06 Marks)**

c. The following table gives the variations of periodic current over a period T.

t (secs)	0	T/6	T/3	T/2	2T/3	5T/6	T
A (Amps)	1.98	1.30	1.05	1.30	–0.88	–0.25	1.98

Expand the function (periodic current) by Fourier series and show that there is a direct current part of 0.75 amp and also obtain amplitude of first harmonic. **(06 Marks)**

Module-2

3 a. Find Fourier transform of $f(x)=\begin{cases}1-x^2; & |x|<1\\ 0; & |x|>1\end{cases}$

and hence evaluate $\int_0^{\infty}\frac{x\cos x-\sin x}{x^3}dx$. **(08 Marks)**

b. Find Fourier Cosine transform of the function :

$$f(x)=\begin{cases}4x; & 0<x<1\\ 4-x; & 1<x<4\\ 0; & x>4\end{cases}$$ **(06 Marks)**

c. Find z-transforms of : i) $a^n \sin n\theta$ ii) $a^{-n}\cos n\theta$. **(06 Marks)**

OR

4 a. Find Fourier sine transform of $f(x) = e^{-|x|}$ and hence evaluate : $\int_0^\infty \frac{x \sin mx}{1+x^2} dx, m > 0$. **(08 Marks)**

b. Find z-transform of $u_n = \cos h\left(\frac{n\pi}{2} + \theta\right)$. **(06 Marks)**

c. Solve the difference equation using z-transforms $u_{n+2} + 6u_{n+1} + 8u_n = 2^n$ .Given $u_0 = u_1 = 0$. **(06 Marks)**

Module-3

5 a. If θ - is the acute angle between the two regression lines relating the variables x and y, show that $\text{Tan}\theta = \left(\frac{1-r^2}{r}\right)\left(\frac{\sigma_x \sigma_y}{\sigma_x^2 \sigma_y^2}\right)$. **(08 Marks)**

Indicate the significance of the cases $r = \pm 1$ and $r = 0$.

b. Fit a straight line $y = ax + b$ for the data.

x	12	15	21	25
y	50	70	100	130

(06 Marks)

c. Find a real root of the equation by using Newton-Raphson method near $x = 0.5$, $xe^x = 2$, perform three iterations. **(06 Marks)**

OR

6 a. Compute the coefficient of correlation and equation of regression of lines for the data :

x	1	2	3	4	5	6	7
y	9	8	10	12	11	13	14

(08 Marks)

b. The Growth of an organism after x – hours is given in the following table :

x (hours)	5	15	20	30	35	40
y (Growth)	10	14	25	40	50	62

Find the best values of a and b in the formula $y = ae^{bx}$ to fit this data. **(06 Marks)**

c. Find a real root of the equation $\cos x = 3x - 1$ correct to three decimals by using Regula – False position method, given that root lies in between 0.6 and 0.7. Perform three iterations. **(06 Marks)**

Module-4

7 a. Find y(8) from y(1) = 24, y(3) = 120, y(5) = 336, y(7) = 720 by using Newton's backward difference interpolation formula. **(08 Marks)**

b. Define f(x) – as a polynomial in x for the following data using Newton's divided difference formula. **(06 Marks)**

x	–4	–1	0	2	5
f(x)	1245	33	5	9	1335

c. Evaluate the integral $I = \int_0^6 \frac{dx}{4x+5}$ using Simpson's $\frac{1}{3}$rd rule using 7 ordinates. **(06 Marks)**

OR

8 a. For the following data calculate the differences and obtain backward difference interpolation polynomial. Hence find f(0.35). **(08 Marks)**

x	0.1	0.2	0.3	0.4	0.5
f(x)	1.40	1.56	1.76	2.0	2.28

b. Using Lagrange's interpolation find y when x = 10.

x	5	6	9	11
y	12	13	14	16

(06 Marks)

c. Evaluate $\int_0^1 \frac{x}{1+x^2}\,dx$ by Weddle's rule considering seven ordinates. **(06 Marks)**

Module-5

9 a. Verify the Green's theorem in the plane for $\int_C (x^2+y^2)dx + 3x^2y\,dy$ where C – is the circle $x^2+y^2 = 4$ traced in positive sense. **(08 Marks)**

b. Evaluate $\int_C (\sin z\,dx - \cos x\,dy + \sin y\,dx)$ by using Stokes theorem, where C – is the boundary of the rectangle $0 \le x \le \pi$, $0 \le y \le 1$ and $z = 3$. **(06 Marks)**

c. Find the curve on which the functional : $\int_0^1 [y'^2 + 12xy]dx$ with y(0) = 0, y(1) = 1 can be extremised. **(06 Marks)**

OR

10 a. Given $f = (3x^2 - y)i + xzj + (yz - x)k$ evaluate $\int_C f \cdot dr$ from (0, 0, 0) to (1, 1, 1) along the paths $x = t$, $y = t^2$ and $z = t^3$. **(08 Marks)**

b. Derive Euler's equation in the form $\frac{\partial f}{\partial y} - \frac{d}{dx}\left(\frac{\partial f}{\partial y'}\right) = 0$. **(06 Marks)**

c. Prove that the shortest distance between two points in a plane is a straight line. **(06 Marks)**

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17EC32

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Electronic Instrumentation

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define the following terms:
   i) Accuracy and precision
   ii) Grass error and systematic error. **(06 Marks)**

b. Draw the block diagram of a true RMS volt meter and explain its operation. **(07 Marks)**

c. Calculate series connected multiplier resistance with a D'Arsonval movement with an internal resistance of 50Ω and full scale deflection current of 2mA in to a multi range d.c. voltmeter with range from 0 – 10V, 0 – 50V, 0 – 100V and 0 – 250V. **(07 Marks)**

OR

2 a. State different types of thermocouple used for RF current measurement and explain each one of them in brief. **(07 Marks)**

b. Sketch and explain the operation of a Multirange Ammeter and Aryton shunt. **(07 Marks)**

c. The expected value of the voltage across a resistor is 75V, But measurement gives a value of 74V, calculate:
   i) Absolute error
   ii) % error
   iii) Relative accuracy and
   iv) % of accuracy. **(06 Marks)**

Module-2

3 a. Describe with a diagram the operation of a successive approximation type DVM. **(07 Marks)**

b. Explain with a diagram the working of digital pH meter. **(07 Marks)**

c. A 4½ digits DVM is used for voltage measurements. Find:
   i) Resolution
   ii) How would 67.50V be displayed on 5V range
   iii) How would 0.716V be displayed on 10V range. **(06 Marks)**

OR

4 a. Describe with the help of a diagram the operation of universal counter. **(07 Marks)**

b. Explain with block diagram digital phase meter operation. **(06 Marks)**

c. With the block diagram, explain the digital frequency meter. **(07 Marks)**

Module-3

5 a. Draw the basic block diagram of a oscilloscope and explain the function of each block. **(08 Marks)**

b. Sketch the block diagram and explain AF Sine and square wave generator. **(07 Marks)**

c. Discuss the important features of Cathode Ray Tube (CRT). **(05 Marks)**

OR

6 a. With block diagram, explain the working of DSO and list the advantages of it. **(08 Marks)**

b. Explain the function generator with suitable diagram. **(07 Marks)**

c. Discuss frequency measurement with Lissajous figure. **(05 Marks)**

Module-4

7 a. With circuit diagram, explain Q-meter and mention its application. **(06 Marks)**

b. Draw the circuit of a Wheatstone's bridge and explain how it can be used to measure unknown resistance. **(06 Marks)**

c. Draw the circuit diagram and obtain the balance condition for Maxwell's bridge. If bridge contents are $C_1 = 0.5\ \mu F$, $R_1 = 1200\Omega$, $R_2 = 700\Omega$ and $R_3 = 300\Omega$ find resistance and inductance of the coil. **(08 Marks)**

OR

8 a. What is Meggar? Explain the basic Meggar circuit. **(08 Marks)**

b. With neat diagram, explain the working of Wien's bridge? How it can be used as oscillator. **(08 Marks)**

c. A capacitance comparison bridge is used to measure a capacitive impedance at a frequency of 2kHz the bridge constants at balance are $C_3 = 100\mu F$, $R_1 = 10K\Omega$, $R_2 = 50K\Omega$ and $R_3 = 100K\Omega$. Find the equivalent series circuit of the unknown impedance. **(04 Marks)**

Module-5

9 a. List the factors to be considered while selecting transducers. **(06 Marks)**

b. Explain principle operation of resistive position transducer. **(06 Marks)**

c. Derive an expression for gauge factor for Bonded resistance wire strain gauges. **(08 Marks)**

OR

10 a. Explain the construction and operation of LVDT show the characteristic curve. **(08 Marks)**

b. Explain Piezoelectric transducer. **(06 Marks)**

c. Explain semiconductor photo diode and photo transistor. **(06 Marks)**

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17EC33

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Analog Electronics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Derive an expression for input impedance, output impedance, voltage gain and current gain of un bypassed RE common emitter amplifier using r_e model. **(10 Marks)**

b. For the network of Fig.Q1(b), determine : i) r_e ii) Z_i iii) Z_0, ($r_0 = \infty\Omega$) iv) A_V($r_0 = \infty\Omega$) v) the parameters of parts ii through iv if $r_0 = 50K\Omega$ for $R_1 = 56K\Omega$, $R_2 = 8.2K\Omega$, $C_1 = 10\mu f$, $C_2 = 10\mu f$, $R_E = 1.5K\Omega$, $C_E = 20\mu f$, $R_C = 6.8K\Omega$, $\beta = 90$ and $V_{CC} = 22V$. **(10 Marks)**

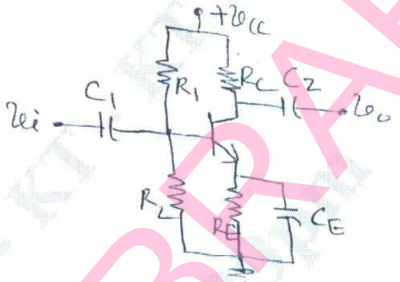

Fig.Q1(b)

OR

2 a. Derive an expression of input impedance, output impedance, voltage gain and current gain of fixed bias CE amplifier using h-parameter. **(10 Marks)**

b. Determine r_e, h_{fe}, h_{ie}, Z_i, Z_0, A_V and A_i for the circuit shown in Fig.Q2(b) using hybrid equivalent model. **(10 Marks)**

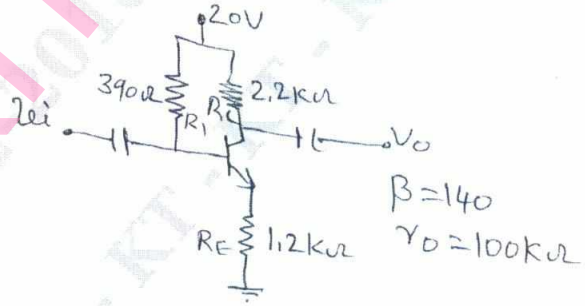

Fig.Q2(b)

Module-2

3 a. Explain the working principle of JFET, and explain the transfer characteristics of JFET. **(08 Marks)**

b. Derive an expression for input impedance, output impedance, voltage gain and current gain of fixed bias FET amplifier. **(08 Marks)**

c. Distinguish between JFET and MOSFET. **(04 Marks)**

OR

4 a. With neat diagram explain construction and working principle of n-channel depletion type MOSFET. **(10 Marks)**

b. Derive an expression for input impedance, output impedance and voltage gain of common – Gate FET amplifier. **(10 Marks)**

Module-3

5 a. Derive an expression for low frequency response of BJT amplifier due to capacitors C_S, C_E and C_C. **(10 Marks)**

b. Determine the lower cutoff frequency for the network of Fig.Q5(b) using the following parameters $C_i = 10\mu f$, $C_E = 20\mu f$, $C_C = 1\mu f$, $R_S = 1k\Omega$, $R_1 = 40\ K\Omega$, $R_2 = 10K\Omega$, $R_E = 2K\Omega$, $R_C = 4K\Omega$, $R_L = 2.2K\Omega$, $\beta = 100$, $r_0 = \infty\Omega$ and $V_{CC} = 20V$, plot the response. **(10 Marks)**

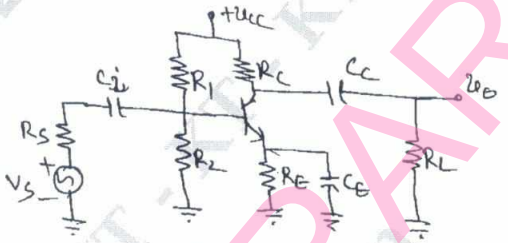

Fig.Q5(b)

OR

6 a. Define Miller's theorem, determine equivalent input and output capacitances of the circuit. **(10 Marks)**

b. Determine the lower cutoff frequency for the network of Fig.Q6(b) using the following parameters. $C_G = 0.01\mu f$, $C_C = 0.5\mu f$, $C_S = 2\mu f$, $R_{Sig} = 10K\Omega$, $R_G = 1M\Omega$, $R_0 = 4.7K\Omega$, $R_S = 1K\Omega$, $R_L = 2.2K\Omega$, $I_{DSS} = 8mA$, $V_P = -4V$, $r_d = \infty\Omega$, $V_{DD} = 20V$, $V_{GSQ} = -2V$ and $I_{DQ} = 2mA$. Plot the frequency response. **(10 Marks)**

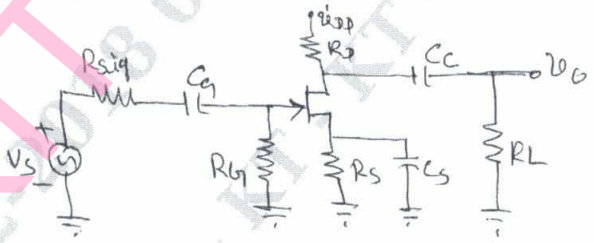

Fig.Q6(b)

Module-4

7 a. Determine input resistance and output resistance of voltage shunt feedback amplifier. **(06 Marks)**

b. Determine the voltage, input and output impedance with feedback for voltage series feedback having $A = 100$, $R_i = 10K\Omega$ and $R_0 = 20K\Omega$ for feedback of i) $\beta = 0.1$ ii) $\beta = 0.5$. **(07 Marks)**

c. Explain the characteristics of negative feedback amplifier. **(07 Marks)**

OR

8 a. What is Barkhasen criteria for sustained oscillation? Explain basic principle of operation of oscillators. **(08 Marks)**

b. Explain the working of Wein bridge oscillator. Write the equation for frequency of oscillations. **(08 Marks)**

c. For the colpitts oscillators, $C_1 = 0.005\mu f$, $C_2 = 0.01\ \mu f$, $L = 100\mu H$, $L_{PFc} = 0.5mH$, $C_C = 10\mu f$ and $h_{fc} = 110$.

i) Calculate frequency of oscillation

ii) Check the condition for oscillation is satisfied. **(04 Marks)**

Module-5

9 a. Explain the operation of transformer coupled class – A power amplifier and show that the maximum percentage efficiency is 50%. **(07 Marks)**

b. Explain with neat circuit diagram, the working of a complementary symmetry class – B amplifier. **(07 Marks)**

c. Derive an expression for second harmonic distortion using 3 – point method. **(06 Marks)**

OR

10 a. Define voltage regulator. Explain the operation of series regulator circuit. **(07 Marks)**

b. Explain the operation of shunt regulator using OP-Amp with neat circuit diagram. **(07 Marks)**

c. Calculate the output voltage and Zener current in the regulator circuit of Fig.Q10(c) for $R_L = 1K\Omega$, $V_z = 12V$, $R = 220\Omega$, $v_i = 20V$ and $\beta = 50$. **(06 Marks)**

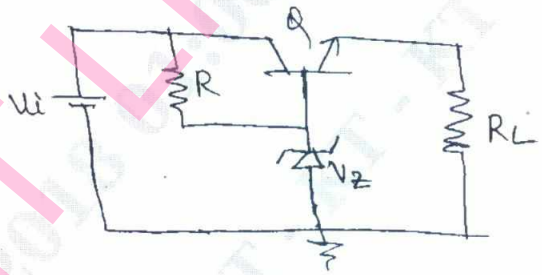

Fig.Q10(c)

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17EC34

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Digital Electronics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 a. Convert $x = \bar{a}b + bc$ to canonical SOP form. **(02 Marks)**

b. Simplify $G = f(w,x,y,z) = \pi M(1,3,8,10,12,13,14,15)$ in POS form and implement using NOR gates. **(08 Marks)**

c. Simplify the following using Quine-McClusky's minimization technique.
$V = f(a, b, c, d) = \sum m(1, 3, 4, 5, 6, 9, 11, 12, 13, 14)$ **(10 Marks)**

OR

2 a. Convert $P = (\bar{w} + x)(y + \bar{z})$ to canonical POS form. **(03 Marks)**

b. Simplify $P = f(a, b, c, d) = \sum m(2, 3, 4, 5, 13, 15) + \sum d(8, 9, 10, 11)$ in SOP form and implement using NAND gates. **(07 Marks)**

c. Simplify using Quine-McClusky's minimization technique:
$V = f(a, b, c, d) = \sum m(1, 5, 7, 9, 13, 15) + \sum d(8, 10, 11, 14)$ **(10 Marks)**

Module-2

3 a. Implement $f_1(a, b, c) = \sum m(1, 3, 5)$; $f_2(a, b, c) = \sum m(0, 1, 6)$ using 74138, 3:8 decoder. **(06 Marks)**

b. With a neat circuit diagram explain the carry look ahead adder with relevant expressions. **(10 Marks)**

c. Design a one-bit comparator, implement using suitable gates. **(04 Marks)**

OR

4 a. Using 74151, 8:1 Mux, realize the Boolean function $F(a, b, c, d) = \sum m(0, 1, 5, 6, 7, 10, 15)$ with b, c, d as select lines. **(04 Marks)**

b. With neat circuit diagram, explain the keypad interface using 74147, 10 line to BCD encoder. **(10 Marks)**

c. Design a full subtractor and implement using logic gates. **(06 Marks)**

Module-3

5 a. Discuss the working principle of Gated SR latch with its truth Table. **(06 Marks)**

b. Explain the operation of Switch debouncer built using SR latch with the help of circuit and waveforms. **(08 Marks)**

c. Obtain the characteristic equations of JK flip flop and SR flip flop. **(06 Marks)**

OR

6 a. What is race around condition? How it can be overcome? **(02 Marks)**

b. Explain the working of MS-JK flip flop with logic symbol and timing diagram. **(10 Marks)**

c. Explain the working of +ve edge triggered D flip flop with the functional table. **(08 Marks)**

Module-4

7 a. Explain the working of four bit ripple counter using +ve edge triggered T flip-flops with the counting sequence table and timing diagram. **(10 Marks)**

b. Explain the SIPO and SISO operation of shift register with relevant logic diagram and the truth table. **(06 Marks)**

c. Explain the operation of ring counter using logic diagram and truth table. **(04 Marks)**

OR

8 a. Explain Universal Shift Register with the help of logic diagram and mode control table. **(10 Marks)**

b. Realize a three-bit binary synchronous up counter using JK flip flops. **(10 Marks)**

Module-5

9 a. Construct a Mealy state diagram that will detect input sequence 10110, when input pattern is detected Z is asserted high. Write the state diagram. **(10 Marks)**

b. Design a synchronous counter using T flip flops to count the sequence 0, 2, 3, 6, 5, 1, 0, 2, … Write the excitation table and state diagram and logic diagram. **(10 Marks)**

OR

10 a. Explain Mealy and Moore model of clocked synchronous sequential circuit with the block diagram. **(08 Marks)**

b. For the logic diagram given in Fig.Q10(b):

i) Derive the excitation and output equations

ii) Write the state equations

iii) Construct transition table and state table

iv) Draw the state diagram

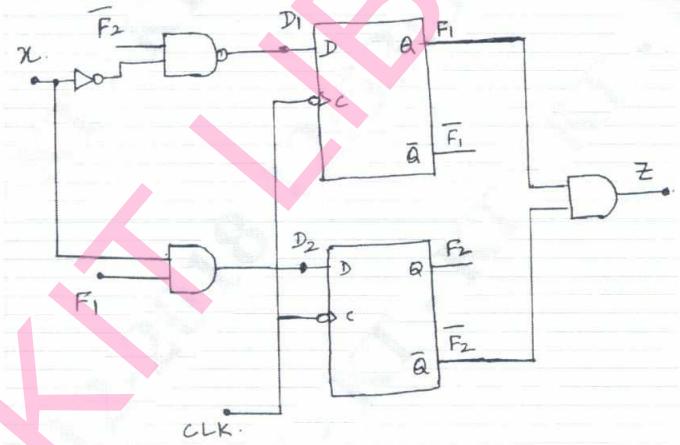

Fig.Q10(b) **(12 Marks)**

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17EC35

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Network Analysis

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Reduce the Network shown in Fig Q1(a) to a single voltage source in series with a resistance using source shift and source transformation. **(07 Marks)**

b. Use mesh analysis to determine the three mesh currents I_1, I_2 and I_3 in the circuit show in Fig Q1(b). **(05 Marks)**

c. Find current in 30Ω resistor using nodal analysis for the circuit shown in Fig Q1(c). **(08 Marks)**

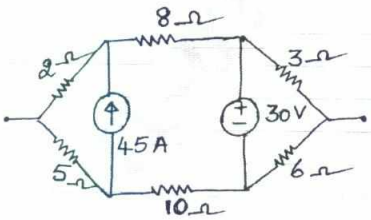

Fig Q1(a)

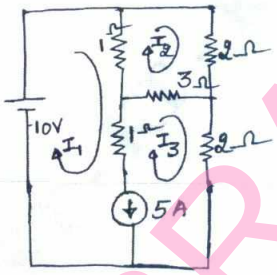

Fig Q1(b)

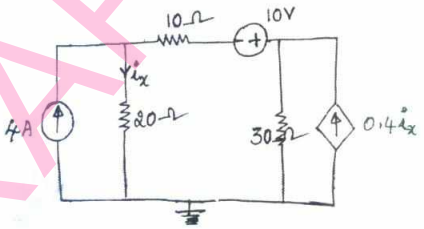

Fig Q1(c)

OR

2 a. Find the equivalent resistance between a and b using star delta transformation for the network shown in Fig Q2(a). **(05 Marks)**

b. For the circuit shown in Fig Q2(b), determine I_x and other loop currents. **(07 Marks)**

c. For the circuit shown in Fig Q2(c), determine all node voltages. **(08 Marks)**

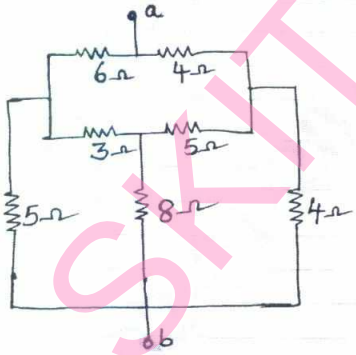

Fig 2(a)

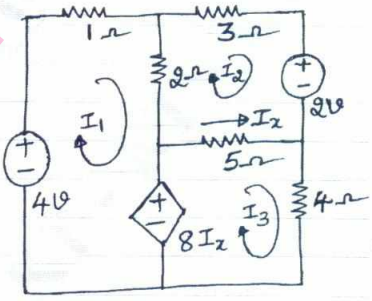

Fig 2(b)

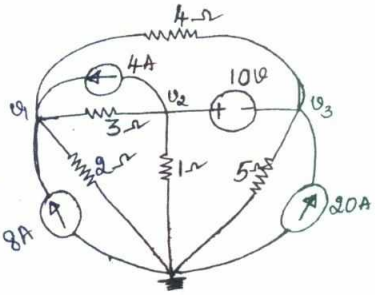

Fig 2(c)

Module-2

3 a. For the circuit shown in Fig Q3(a), find the current I_x using super position theorem. **(07 Marks)**

b. Verify Reciprocity theorem by calculating 'I' for the network shown in Fig Q3(b). **(05 Marks)**

c. Obtain the Thevenin's equivalent of the circuit shown in Fig Q 3(c) **(08 Marks)**

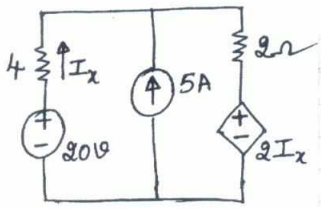

Fig Q3 (a)

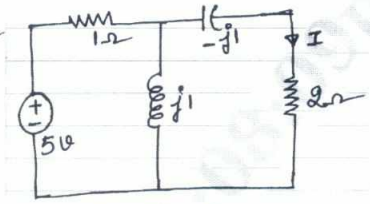

Fig Q3 (b)

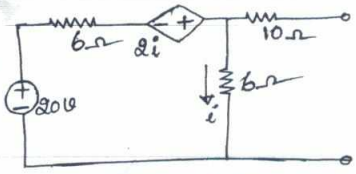

Fig Q3 Q(c)

OR

4 a. For the circuit shown in Fig Q4(a), find the current in $(6 + j8)\Omega$ impedance using Millman's theorem. **(05 Marks)**

b. For the Network shown in Fig Q4(b), determine Norton's equivalent across A and B. Find the current thorough the impedance $(6 - j8)\ \Omega$ connected to the terminals A and B. **(05 Marks)**

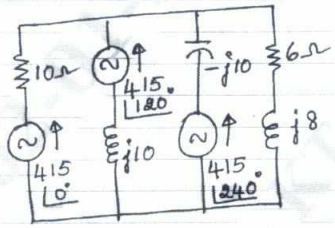

Fig Q4(a)

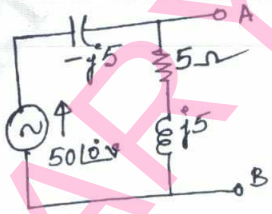

Fig Q4(b)

c. State and prove maximum power transfer theorem for A.C circuit, where both R_L and X_L are varying. **(10 Marks)**

Module-3

5 a. In the Network shown in Fig Q5(a), a steady state is reached with the switch K open. At t = 0, the switch K is closed. Obtain the initial values of (i) i_1 (ii) i_2 (iii) v_c iv) $\frac{di_1}{dt}$ v) $\frac{di_2}{dt}$ and $\frac{di_1}{dt}$ at $t = \infty$. **(10 Marks)**

b. For the given circuit in Fig Q5(b), find the value of the loop currents, their first derivatives and their 2nd derivatives, all evaluated at $t = 0^+$, given that $V_c(0^-) = 1$ volt, $i_2(0^-) = 0$ amp. At t = 0, sw_1 and sw_2 are closed. **(10 Marks)**

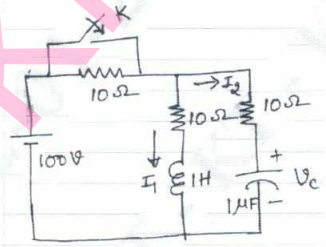

Fig Q5(a)

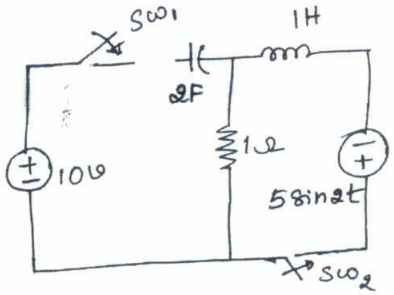

Fig Q5(b)

OR

6 a. In the circuit of Fig Q6(a), the source voltage is $v(t) = 50\sin 250t$. Using Laplace transforms, determine the current when switch K is closed at t = 0. **(08 Marks)**

b. Synthesize the periodic waveform shown in Fig Q6(b) and find its Laplace transform and prove any formula used. **(12 Marks)**

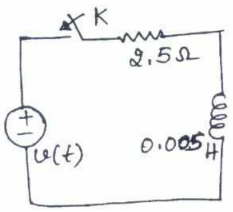

Fig Q6(a)

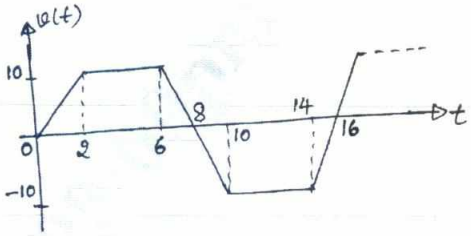

Fig Q6(b)

Module-4

7 a. Show that resonant frequency of series resonant circuit is equal to the geometric mean of two half power frequencies. **(05 Marks)**

b. A coil is connected in series with a variable capacitor across v(t) = 10 cos 1000t. The current is maximum when c = 10μF. When C = 12.5μF, the current is 0.707 times the maximum value. Find L, R, and Q of the coil. **(08 Marks)**

c. A coil has resistance of 400Ω and inductance of 318μH. Find the capacitance of capacitor which when connected in parallel with the coil will produce resonance with a supply frequency of 1MHz. If a second capacitor of capacitance 23.42pF is connected in parallel with the first capacitor, find the frequency at which resonance will occur. **(07 Marks)**

OR

8 a. Derive the expression for the resonant frequency of the circuit shown in Fig Q8(a). Also show that the circuit will resonate at all frequencies if $R_L = R_c = \sqrt{\frac{L}{C}}$. **(12 Marks)**

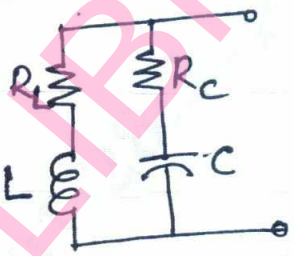

Fig Q8(a)

b. A coil of 10Ω resistance 0.2H inductance is connected in parallel with a variable condenser across 220V, 50Hz supply. Determine: (i) Capacitance of condenser so that current drawn may be in phase with the supply voltage (ii) Effective impedance of the circuit (iii) Power absorbed at resonance (iv) Current magnification factor. **(08 Marks)**

Module-5

9 a. Z-parameters of a Network are obtained from an experiment. Explain how y-parameters and transmission parameter can be computed from the experimental data. **(10 Marks)**

b. Find Z and Y parameters of the network shown in Fig Q9(b).

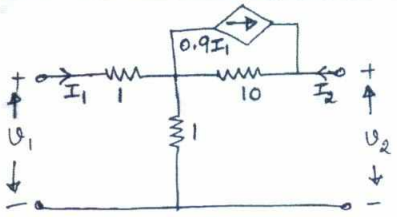

Fig Q9(b) **(10 Marks)**

OR

10 a. Find Z and h-parameters for the network shown in Fig Q10(a). **(12 Marks)**

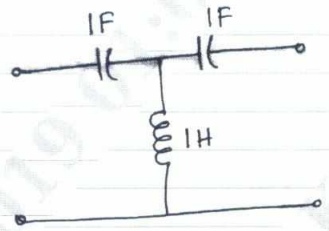

Fig Q10(a)

b. Write a note on hybrid π's with its equivalent circuit. **(04 Marks)**

c. Explain symmetry and reciprocal property of 2-port Networks. **(04 Marks)**

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CBCS SCHEME

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17EC36

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Engineering Electromagnetics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. State and explain Coulomb's law in complete form. **(06 Marks)**

b. Two particles having charges 2nc and 5nc are spaced 80cm apart. Determine the $\overline{E}$ at a point is situated at a distance of 0.5m from each of the two particles. Use $\varepsilon r = 5$. (Use Bakelite medium). **(06 Marks)**

c. Identical point charges of 3μc are located at the four corners of the square of 5cm side, find the magnitude of the force on any one charge? **(08 Marks)**

OR

2 a. Derive expression for E due to infinite line charge from first principle. **(08 Marks)**

b. Two uniform line charges of density 4n c/m and 6n c/m lie in x = 0 plane at y = +5m and – 6m respectively. Find E at $(4, 0, 5)^m$. **(06 Marks)**

c. Define E and D, Hence establish the relation between D and E. **(06 Marks)**

Module-2

3 a. State and prove Gauss divergence theorem. **(06 Marks)**

b. If $D = \frac{5r^2}{4}\hat{a}_r\ c/m^2$. (in spherical system) then evaluates both sides of the divergence theorem for the volume enclosed by r = 4m, and $\theta = \pi/4$ radians. **(08 Marks)**

c. Prove that $\rho_v = \nabla \cdot D$. **(06 Marks)**

OR

4 a. Establish relation $E = -\nabla v$ **(06 Marks)**

b. Electrical potential at an arbitrary point in free space is given as $V = (x+1)^2 + (y+2)^2 + (z+3)^2$ Volts at p(2, 1, 0). Find :

i) V ii) $\overline{E}$ iii) $|\overline{E}|$ iv) $|\overline{D}|$ v) ρ_v **(08 Marks)**

c. Derive continuity of current equation. **(06 Marks)**

Module-3

5 a. Derive Laplace and Poisson's equations and write Laplace Equation in all 3 co-ordinate systems. **(08 Marks)**

b. State and prove uniqueness theorem. **(07 Marks)**

c. Calculate the numerical values for V and ρ_v at P in free space if $V = \frac{4yz}{x^2+1}$ at P(1, 2,3). **(05 Marks)**

OR

6 a. An assembly of two concentric spherical shells is considered. The inner spherical shell is at a distance of 0.1m and is at a potential of 0 volts. The outer spherical shell is at a distance of 0.2m and at a potential of 100V. The medium between them is a free space. Find $\overline{E}$ and $\overline{D}$ using spherical co-ordinate system. **(06 Marks)**

b. State and prove Ampers circuital law. **(08 Marks)**

c. At a point P(x, y, z) the components of vector magnetic potential $\overline{A}$ are given as

$Ax = 4x + 3y + 2z$

$Ay = 5x + 6y + 3z$ and

$Az = 2x + 3y + 5z$

Determine $\overline{B}$ at point P and state its nature. **(06 Marks)**

Module-4

7 a. Derive an expression for the force on a differential current element placed in a magnetic field and deduce the result for straight conductor in a uniform magnetic field. **(08 Marks)**

b. A point charge Q = 18nc has a velocity of 5×10^6 m/s in the direction $\overline{a}_v = 0.6\hat{a}_x + 0.75\hat{a}_y + 0.3\hat{a}_z$.

Calculate the magnitude of the force exerted on the charge by the field

i) $\overline{E} = -3\hat{a}_x + 4\hat{a}_y + 6\hat{a}_z$ K v/m

ii) $\overline{B} = -3\hat{a}_x + 4\hat{a}_y + 6\hat{a}_z$ MT

iii) $\overline{B}$ & $\overline{E}$ acting together. **(06 Marks)**

c. State and explain Lorentz force equation. **(06 Marks)**

OR

8 a. Define : i) Magnetization ii) Permeability. **(04 Marks)**

b. If $\overline{B} = 0.05$ x $\hat{a}_y$ T in a material for which magnetic susceptibility $X_m = 2.5$. Find

i) μ_r ii) μ iii) $\overline{H}$ iv) $\overline{M}$ v) $\overline{J}$ vi) $\overline{J}_b$ **(08 Marks)**

c. Discuss the boundary conditions at the interface between two media of different permiabities? **(08 Marks)**

Module-5

9 a. Derive Maxwell's Equations in point form and Integral form for Time varying fields. **(08 Marks)**

b. For a lossy dielectric $\sigma = 5$ s/m, $\varepsilon_r = 1$ the electric filed intensity is E = 100 sin 10^{10} t. Find J_c and J_d and frequency at which both have Equal Magnitudes. **(04 Marks)**

c. Starting from Maxwell's Equation Derive the wave equation for a uniform plane wave travelling in free space. **(08 Marks)**

OR

10 a. State and prove Poynthing theorem. **(08 Marks)**

b. Deduce the expressions for α and β for a uniform plane wave propagation in good conducting medium. **(06 Marks)**

c. Wet Marshy soil is characterized by $\sigma = 10^{-2}$ s/m, $\varepsilon_r = 15$ and $\mu_r = 1$. At the frequencies 60Hz, 1 MHz, 100 MHz and 10 GHz indicate whether the soil may be considered a conducting dielectric or neither. **(06 Marks)**

CBCS SCHEME

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17CPH39

Question Paper Version : D

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Constitution of India, Professional Ethics and Human Rights (CPH)
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [Max. Marks: 30

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the thirty questions, each question carries **ONE mark.**
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, use of whiteners** on the **OMR** sheets are strictly prohibited.

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1. Good works mean
   a) Superior work done with great care and skill
   b) Responsible work
   c) Work above and beyond the call of duty
   d) Work involving high risk.

2. Engineering profession is considered to be like a building, its foundation is
   a) Hard and sincere work b) Expert engineering knowledge and skill
   c) Sound common sense and expert knowledge d) Honesty

3. In engineering research work, cooking means
   a) Boiling under pressure
   b) Retaining only those results which fit the theory
   c) Making deceptive statements
   d) Misleading the public about the quality of the product

4. Engineering Ethics is a
   a) Preventive ethics b) Natural ethics
   c) Technical ethics d) Scientifically developed ethics

5. The author of a book retains the copy right for _____ after his or her death.
   a) 20 years b) 30 years
   c) 60 years d) 10 years

6. The public is put to increased risk by allowing increased number of deviations from specified standards of safety and acceptable risk is known as
   a) Normal accident
   b) Normalizing deviance
   c) Risk assessment
   d) Overestimated risk.

7. The Election Commission of India does not conduct election to
   a) The Parliament
   b) The office of the President
   c) The post of Prime Minister
   d) The office of the Vice President

8. What is the tenure of the Chief Election Commissioner and other election commissioners?
   a) 3 years or upto 62 years of age
   b) 5 years or upto 65 years of age
   c) 6 years or upto 65 years of age
   d) 5 years or upto 70 years of age

9. The procedure for amending the Indian Constitution is detailed under
   a) Art. 356
   b) Art. 360
   c) Art. 366
   d) Art. 368

10. Art. 21A – Right to Education as a Fundamental Right was added to the Indian constitution by
    a) 61st Constitution Amendment
    b) 74th Constitution Amendment
    c) 86th Constitution Amendment
    d) 91st Constitution Amendment

11. When the State Emergency is in operation, the President cannot interfere in the matters of
    a) State Judiciary
    b) State Executive
    c) State Legislature
    d) All of these.

12. While Proclamation of National Emergency is in operation, the President cannot suspend certain Fundamental Rights. These are
    a) Art. 14 and Art. 15
    b) Art. 14 and Art. 16
    c) Art. 20 and Art. 21
    d) Art. 32

13. B. P. Mandal commission appointed in 1978 by the President of India dealt with
    a) Rights of the minority
    b) Laws relating to child labour
    c) Laws relating to sexual harassment at work places
    d) Reservation for other backward classes (OBC) people in Government Jobs.

14. Who are considered to be vulnerable group?
    a) Women and children
    b) Scheduled Caste people
    c) Scheduled Tribe people
    d) All of these

15. Who can be appointed as the Chairman of the National Human Rights Commission?
    a) Any sitting judge of the Supreme Court
    b) Any retired Chief Justice of the Supreme Court
    c) Any person appointed by the President
    d) Retired Chief Justice of any High Court

16. National Human Rights commission is a _____
    a) Statutory body
    b) Constitutional body
    c) Multilateral Institution
    d) Both (a) and (c)

17. Powers, authority and responsibilities of Municipalities have been provided under
a) Article 243 N
b) Article 243 W
c) Article 243 M
d) None of these

18. Which among the following is considered as the training ground for the development of democratic institutions?
a) Nagar Panchayats
b) Municipalities
c) Municipal Corporations
d) Gram Panchayats

19. The ground for the impeachment of President is
a) Failure to follow the advice given by the Prime Minister
b) Unable to discharge his duties due to old age
c) Violation of the constitution
d) Misbehaviour with foreign dignitaries.

20. The size of the Union council of ministers including Prime Minister shall not be more than _____ percent of the members strength of Lok Sabha.
a) 10
b) 15
c) 18
d) 20

21. The total number of elected members from various states in Lok Sabha are
a) 530
b) 540
c) 550
d) 500

22. This is not the jurisdiction of the Supreme Court.
a) Original Jurisdiction
b) Emergency Jurisdiction
c) Appellate Jurisdiction
d) Advisory Jurisdiction.

23. Collective responsibility of the State Council of Ministers means, all Ministers are collectively responsible to the
a) Chief Minister
b) Governor
c) State Legislative Council
d) State Legislative Assembly.

24. The Governor may resign his office by writing to
a) The Prime Minister
b) The President
c) The Chief Justice of High Court
d) The Chief Minister of the State

25. The constitution of India derives its authority from the
a) Parliament of India
b) Supreme Court of India
c) People of India
d) Constituent Assembly of India

26. It is not the objective enshrined in the preamble
a) Equality of status
b) Secure shelter and proper livelihood to all
c) Liberty of thought and expression
d) Social, economic and political justice

27. Right of decent environment includes
a) Freedom to reside in any part of India.
b) Right to religion
c) Right to equal protection of law.
d) Right to life.

28. The Emergency provisions incorporated in the Constitution of India were influenced by the Constitution of
    a) German Reich
    b) U.S.A
    c) Russia
    d) Canada

29. The Directive Principles of State Policy directs the State to secure to all workers
    a) Minimum wages
    b) Fair wages
    c) Living wages
    d) Standard wages

30. This is not a fundamental duty.
    a) To defend the country
    b) To abjure violence
    c) To uphold and protect sovereignty of India
    d) To make scientific improvement

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CBCS SCHEME

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17MATDIP31

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Additional Mathematics – I

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Prove that $(1 + \cos\theta + i\sin\theta)^n + (1 + \cos\theta - i\sin\theta)^n = 2^{n+1}\cos^n\left(\frac{\theta}{2}\right)\cos\left(\frac{n\theta}{2}\right)$ **(08 Marks)**

b. Express $\sqrt{3}+i$ in the polar form and hence find its modulus and amplitude. **(06 Marks)**

c. Find the sine of the angle between vectors $\vec{a} = \hat{i}+\hat{j}+\hat{k}$ and $\vec{b} = 2\hat{i}-3\hat{j}+2\hat{k}$ **(06 Marks)**

OR

2 a. Express $\frac{3+4i}{3-4i}$ in the form x + iy. **(08 Marks)**

b. If the vector $2\hat{i}+\lambda\hat{j}+\hat{k}=0$ and $4\hat{i}-2\hat{j}-2\hat{k}$ are perpendicular to each other, find λ. **(06 Marks)**

c. Find λ, such that the vectors $2\hat{i}-\hat{j}+\hat{k}$, $\hat{i}+2\hat{j}-3\hat{k}$, $3\hat{i}+\lambda\hat{j}+5\hat{k}$ are coplanar. **(06 Marks)**

Module-2

3 a. If $y = e^{a\sin^{-1}x}$, prove that $(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - (n^2+a^2)y_n = 0$ **(08 Marks)**

b. With usual notations, prove that $\tan\phi = r\frac{d\theta}{dr}$. **(06 Marks)**

c. If $u = \log_e\frac{x^3+y^3}{x^2+y^2}$, prove that $x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}=1$. **(06 Marks)**

OR

4 a. Using Maclaurin's series, expand $\tan x$ upto the term containing x^5. **(08 Marks)**

b. Find the pedal equation of $r = a(1-\cos\theta)$. **(06 Marks)**

c. If $u = x+3y^2-z^3$, $v = 4x^2yz$ and $w = 2z^2-xy$, find $\frac{\partial(u,v,w)}{\partial(x,y,z)}$ at (1, –1, 0). **(06 Marks)**

Module-3

5 a. Obtain a reduction formula for $\int_0^{\pi/2}\cos^n x\,dx$, $(n>0)$. **(08 Marks)**

b. Evaluate $\int_0^a \frac{x^7}{\sqrt{a^2-x^2}}dx$ **(06 Marks)**

c. Evaluate $\int_1^2\int_1^3 xy^2\,dx\,dy$ **(06 Marks)**

OR

6 a. Obtain a reduction formula for $\int_0^{\pi/2} \sin^n x\,dx$, $(n > 0)$. **(08 Marks)**

b. Evaluate $\int_0^{2a} x^2\sqrt{2ax - x^2}\,dx$ **(06 Marks)**

c. Evaluate $\int_{-1}^{1}\int_{0}^{z}\int_{x-z}^{x+z}(x + y + z)\,dx\,dy\,dz$ **(06 Marks)**

Module-4

7 a. A particle moves along the curve $x = 2t^2$, $y = t^2 - 4t$ and $z = 3t - 5$, where 't' is the time. Find its velocity and acceleration vectors and also magnitude of velocity and acceleration at $t = 1$. **(08 Marks)**

b. In which direction of the directional derivative of x^2yz^3 is maximum at (2, 1, –1) and find the magnitude of this maximum. **(06 Marks)**

c. Show that $\vec{F} = (y + z)\hat{i} + (x + z)\hat{j} + (x + y)\hat{k}$ is irrotational. **(06 Marks)**

OR

8 a. If $\phi = xy^2z^3 - x^3y^2z$, find $\nabla\phi$ and $|\nabla\phi|$ at (1, –1, 1). **(08 Marks)**

b. If $\vec{F} = (x + y + 1)\hat{i} + \hat{j} - (x + y)\hat{k}$, show that $\vec{F} \cdot \text{Curl}\,\vec{F} = 0$. **(06 Marks)**

c. If $x = t^2 + 1$, $y = 4t - 3$, $z = 2t^2 - 6t$ represents the parametric equation of a curve, find the angle between the tangents at $t = 1$ and $t = 2$. **(06 Marks)**

Module-5

9 a. Solve : $\left(x\tan\frac{y}{x} - \frac{y}{x}\sec^2\frac{y}{x}\right)dx = x\sec^2\frac{y}{x}dy$ **(08 Marks)**

b. Solve : $xy(1 + xy^2)\frac{dy}{dx} = 1$ **(06 Marks)**

c. Solve : $\frac{dy}{dx} + \frac{y\cos x + \sin y + y}{\sin x + x\cos y + x} = 0$ **(06 Marks)**

OR

10 a. Solve : $(3y + 2x + 4)dx - (4x + 6y + 5)dy = 0$ **(08 Marks)**

b. Solve : $(1 + y^2)dx = (\tan^{-1}y - x)dy$ **(06 Marks)**

c. Solve : $(y \log y)dx + (x - \log y)dy = 0$. **(06 Marks)**

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CBCS SCHEME

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17KKM39

Question Paper Version : D

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019

ಕನ್ನಡ ಮನಸು

(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [Max. Marks: 30

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ೩೦ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.
2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ನೆ ಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯನ್ನು ಅಂದರೆ A, B, C ಅಥವಾ D ಯನ್ನು ತಪ್ಪಿಲ್ಲದಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಗುರುತಿಸುವುದು ಅಭ್ಯರ್ಥಿಯ ಜವಾಬ್ದಾರಿಯಾಗಿರುತ್ತದೆ.
3. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನಿಗದಿಪಡಿಸಿರುವ ಸ್ಥಳದಲ್ಲಿ ಭರ್ತಿಮಾಡದೆ ಹಾಗೆಯೇ ಬಿಟ್ಟಲ್ಲಿ ಅಥವಾ ಭರ್ತಿಮಾಡಿದ ಮಾಹಿತಿಯಲ್ಲಿ ಯಾವುದೇ ವ್ಯತ್ಯಾಸವಿದ್ದಲ್ಲಿ ಅಂತಹ ಉತ್ತರ ಪತ್ರಿಕೆಗಳನ್ನು ರದ್ದು ಪಡಿಸಲಾಗುವುದು.
4. ಕೇವಲ ಒಂದು ಉತ್ತರವನ್ನು ಮಾತ್ರ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಗುರುತಿಸತಕ್ಕದ್ದು. ಒಂದೆ ಪ್ರಶ್ನೆಗೆ ಎರಡು ಉತ್ತರವನ್ನು ಗುರುತಿಸುವುದು ಅಮಾನ್ಯ.
5. ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ನಿಮಗೆ ಒದಗಿಸಲಾದ ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯ ಹಾಳೆಯ ಮೇಲೆ ಕಪ್ಪು ಅಥವಾ ನೀಲಿ ಶಾಹಿಯ ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಗುರುತು ಮಾಡಬೇಕು.

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1. ಶ್ರೀ ಸಿದ್ಧಲಿಂಗಯ್ಯನವರ 'ಬೆಲ್ಚಿಯ ಹಾಡು' ಕವನದಲ್ಲಿ ಕಂಡುಬರುವ ಅಂಶ :
   ಅ) ಸಮಾಜದ ಸುಸ್ಥಿತಿ ಬ) ಪ್ರೇಮದ ರಮ್ಯತೆ
   ಕ) ಭಕ್ತಿಯ ಪರವಶತೆ ಡ) ದಲಿತರ ಕನಸು

2. 'ಒಲೆಹತ್ತಿ ಉರಿದಡೆ ನಿಲಬಹುದಲ್ಲದೇ, ಧರೆಹತ್ತಿ ಉರಿದರೆ ನಿಲಬಾರದು, ಏರಿ ನೀರುಂಬಡೆ ಬೇಲಿ ಹೊಲದ ಮೇವೊಡೆ, ನಾರಿ ತನ್ನ ಮನೆಯಲ್ಲಿ ಕಳುವೊಡೆ, ತಾಯಿಯ ಮೊಲೆಹಾಲು ನಂಜಾಗಿ ಕೊಲವುಡೆ ಇನ್ನಾರಿಗೆ ದೂರುವೆ ಕೂಡಲ ಸಂಗಮದೇವಾ' ಈ ವಚನದ ರಚನೆಕಾರರು:
   ಅ) ಸರ್ವಜ್ಞ ಬ) ಚಾಮರಸ
   ಕ) ಅಲ್ಲಮಪ್ರಭು ಡ) ಬಸವಣ್ಣ

3. ಮಲೆಮಾದೇಶ್ವರ ಬೆಟ್ಟವಿರುವ ಸ್ಥಳ:
   ಅ) ಅರಿಶಿನಕುಂಟೆ ಬ) ಅಥಣಿ
   ಕ) ಅಫಜಲಪುರ ಡ) ಕೊಳ್ಳೆಗಾಲ

4. 'ಶ್ರೀ ಸಂಗೊಳ್ಳಿ ರಾಯಣ್ಣ' ಯಾರು?
ಅ) ಅದ್ಭುತ ಭಾಷಣಕಾರ ಬ) ವಂದಿಮಾಗಧರಿಗೆ ಸೇರಿದವನು
ಕ) ಬ್ಯಾಂಕಗಳಿಗೆ ಮೋಸ ಮಾಡಿದವನು ಡ) ಬ್ರಿಟಿಷರ ವಿರುದ್ಧಹೋರಾಡಿದಹೋರಾಟಗಾರ

5. ಮೊದಲು ಕನ್ನಡಕ್ಕೊಂದು ಅಪರೂಪ ನಿಘಂಟನ್ನು ರಚಿಸಿಕೊಟ್ಟವರು:
ಅ) ಪಂಪ ಬ) ಹರಿಹರ
ಕ) ಮೆಕಾಲೆ ಡ) ಕಿಟ್ಟೆಲ್

6. 'ಕನ್ನಡ ಸಂಸ್ಕೃತಿ' ಈ ರೀತಿಯಾಗಿದೆ :
ಅ) ಬಹುರೂಪಿಯಾಗಿದೆ ಬ) ವರ್ಣರಂಜಿತವಾಗಿದೆ
ಕ) ಜೀವಂತವಾಗಿದೆ ಡ) ಮೇಲಿನ ಎಲ್ಲವು

7. ಪತ್ರ ವ್ಯವಹಾರ – ಮನವಿಗಳಲ್ಲಿ ಇರಬೇಕಾದದ್ದು :
ಅ) ಸ್ಪಷ್ಟ ಮಾಹಿತಿ ಬ) ನೇರ ನಿರೂಪಣೆ
ಕ) ಸೌಜನ್ಯ ಡ) ಮೇಲಿನ ಎಲ್ಲವು

8. ಸಚಿವ + ಆಲಯ = ಸಚಿವಾಲಯ, ಇಲ್ಲಿರುವ ಸಂಧಿ :
ಅ) ಸುವರ್ಣ ಸಂಧಿ ಬ) ಸವರ್ಣ ದೀರ್ಘ ಸಂಧಿ
ಕ) ರಾಜಯೋಗ ಸಂಧಿ ಡ) ವೃದ್ಧಿ ಸಂಧಿ

9. 'ವಿಶ್ವ ಮಾನವತೆ' ಎನನ್ನು ಪ್ರತಿಪಾದಿಸುತ್ತದೆ?
ಅ) ಕಂದಾಚಾರ ಬ) ಮೂಢನಂಬಿಕೆ
ಕ) ಸಾಮರಸ್ಯ–ಸಹಿಷ್ಣುತೆ ಡ) ಮತೀಯ ದ್ವೇಷ

10. 'ಪಡುವಣ' ಪದದ ವಿರುದ್ಧಾರ್ಥಕ ಪದ
ಅ) ಕೊಂಕಣ ಬ) ಬಡಗಣ
ಕ) ತೆಂಕಣ ಡ) ಮೂಡಣ

11. 'ನಾನು ನಿನ್ನೆ ಕೆ.ಜಿ.ಎಫಗೆ ಹೋಗಿದ್ದೆನು' ಈ ವಾಕ್ಯದಲ್ಲಿರುವ ಕಾಲ :
ಅ) ಭೂತ ಕಾಲ ಬ) ರಾಜಯೋಗ ಕಾಲ
ಕ) ಯಮಗಂಡ ಕಾಲ ಡ) ರಾಹು ಕಾಲ

12. 'ಫೋಟೊಗ್ರಾಫಿ' ಪದಕ್ಕೆ ಸಮನಾದ ಕನ್ನಡದ ಪದ:
ಅ) ವರ್ಣ ಚಿತ್ರ ಬ) ಛಾಯಾ ಚಿತ್ರ
ಕ) ತೈಲ ಚಿತ್ರ ಡ) ಚಲನ ಚಿತ್ರ

13. 'ಬೆಣ್ಣೆ ಹಚ್ಚು' ಪದದ ಸರಿಯಾದ ಅರ್ಥ:
ಅ) ರೊಟ್ಟಿಗೆ ಬೆಣ್ಣೆ ಹಚ್ಚು ಬ) ದೋಸೆಗೆ ಬೆಣ್ಣೆ ಹಚ್ಚು
ಕ) ಹೊಗಳುವುದು ಡ) ರಾಗಿಮುದ್ದೆಗೆ ಬೆಣ್ಣೆ

14. 'ಎಲ್ಲ ಹುಡಿಗಿಯರ ಕನಸು' ಕವನ ಯಾವುದರ ಕುರಿತಾಗಿದೆ?
ಅ) ಸಂಪ್ರದಾಯಗಳಿಗಿಂತಲು ಮಿಗಿಲಾಗಿರುವುದು ಮಹಿಳೆಯ ಘನತೆ.
ಬ) ಮಹಿಳಾ ಮೀಸಲಾತಿ
ಕ) ಸಮಾನತೆಗಾಗಿ ಚಳುವಳಿ
ಡ) ಕನಸಿನ ಮದುವೆ

15. ಶ್ರೀ 'ಬಂದೇ ನವಾಜ್' ಯಾರು?
ಅ) ಗುಲಬರ್ಗಾದ ಸೂಫಿ ಸಂತರು
ಬ) ಬ್ರಿಟಿಶರಿಂದ ಉಂಬಳಿ ಪಡೆದವರು
ಕ) ವಜ್ರ ವ್ಯಾಪಾರಿಗಳು
ಡ) ಗಣಿ ಧಣಿ

16. 'ರೆಹಮಾನರ ಹಾಡಿನ ಕಂಪೋಝಿಶನ ಚೆನ್ನಾಗಿದೆ' ಎನ್ನುವ ವಾಕ್ಯದಲ್ಲಿ ಕಂಪೋಝಿಶನ ಪದಕ್ಕೆ ಸರಿಯಾದ ಕನ್ನಡದ ಪದ:
ಅ) ಧ್ವನಿ ಸಂಪತ್ತು
ಬ) ಸಂಯೋಜನೆ
ಕ) ನಿರ್ದೇಶನ
ಡ) ಕಂಠದಾನ

17. 'ಆನೆಹಳ್ಳದಲ್ಲಿ ಹುಡುಗಿಯರು' ಲೇಖನದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳ ಪ್ರವಾಸದ ಉದ್ದೇಶ :
ಅ) ಆನೆ ದಂತ ಸಂಗ್ರಹಣೆ
ಬ) ಖಡ್ಡಾಗಳ ಕುರಿತು ಅಧ್ಯಯನ
ಕ) ಸಸ್ಯ ವೀಕ್ಷಣೆ
ಡ) ಹುಲಿ ವೀಕ್ಷಣೆ

18. ಡಾ॥ ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣನವರ 'ಗಾಂಧಿ' ಕಥೆ ಏನನ್ನು ಪ್ರತಿಪಾದಿಸುತ್ತದೆ?
ಅ) ವರ್ಣಾಶ್ರಮ ಪದ್ಧತಿ
ಬ) ಜಾತೀಯತೆ
ಕ) ಮುಢ ನಂಬಿಕೆ
ಡ) ಮಹಾತ್ಮ ಗಾಂಧೀಜಿಯವರ ಮೌಲ್ಯಗಳಿಗೆ ಒದಗಿರುವ ಅವಸ್ಥೆಯನ್ನು

19. ಶ್ರೀ ಶಿವರಾಮ ಕಾರಂತರ "ದೋಣಿ ಹರಿಗೋಲುಗಳಲ್ಲಿ" ಲೇಖನ ಯಾವ ರೀತಿಯಾಗಿದೆ?
ಅ) ವಿಡಂಬನೆ
ಬ) ನಾಟಕ
ಕ) ಪ್ರವಾಸ ಕಥನ
ಡ) ತಂತ್ರಜ್ಞಾನ ಲೇಖನ

20. ಶ್ರೀ ವಿಶ್ವೇಶ್ವರಯ್ಯನವರ ವ್ಯಕ್ತಿತ್ವಕ್ಕೆ ಹೊಂದಿಕೊಳ್ಳುವಂತದ್ದು :
ಅ) ಶಿಸ್ತು
ಬ) ಪಾಶ್ಚಾತ್ಯ ದಿರಿಸು
ಕ) ಹೊಣೆಗಾರಿಕೆ
ಡ) ಮೇಲಿನ ಎಲ್ಲವು

21. 'ಸುಖ' ಪದಕ್ಕೆ ವಿರುದ್ಧಾರ್ಥಕ ಪದ :
ಅ) ದು:ಖ
ಬ) ನಲಿವು
ಕ) ಸಂತೋಷ
ಡ) ಒಲವು

22. 'ನಮ್ಮ ಎಮ್ಮೆಗೆ ಮಾತು ತಿಳಿಯುವುದೇ?' ಲೇಖನ ಯಾವ ರೀತಿಯಲ್ಲಿದೆ?
ಅ) ತಂತ್ರಜ್ಞಾನ ಲೇಖನ ಬ) ವಿನೋದ ಲೇಖನ
ಕ) ಪತ್ರಿಕಾ ಅಂಕಣ ಡ) ನಾಟಕ

23. ಶ್ರೀ ಪಿ.ಲಂಕೇಶ 'ಗುಬ್ಬಚ್ಚಿಗೂಡು' ಲೇಖನದಲ್ಲಿ ಚಿಂತಿಸಿರುವುದು :
ಅ) ಭಟ್ಟಂಗಿಗಳ ಬದುಕು ಬ) ದೀನತೆಯ ಬದುಕು
ಕ) ಸ್ವಂತಿಕೆಯ ಬದುಕು ಡ) ಅಸಮಾನತೆಯ ಬದುಕು

24. 'ಜನ' ಯಾವ ಲಿಂಗ
ಅ) ಸ್ತ್ರೀ ಲಿಂಗ ಬ) ಪುಲ್ಲಿಂಗ
ಕ) ಅಲಿಂಗ ಡ) ನಪುಂಸಕಲಿಂಗ

25. 'ಅಂಬಿಕಾತನಯದತ್ತ' ಕಾವ್ಯನಾಮದ ಕವಿ :
ಅ) ದ.ರಾ. ಬೇಂದ್ರೆ ಬ) ಕೆ.ವಿ.ಪುಟ್ಟಪ್ಪ
ಕ) ವಿ.ಕೃ.ಗೋಕಾಕ ಡ) ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ

26. ಕನ್ನಡಕ್ಕೆ ಸಂದಿರುವ ಜ್ಞಾನಪೀಠ ಪ್ರಶಸ್ತಿಗಳು :
ಅ) ೧೦ ಬ) ೮
ಕ) ೭ ಡ) ೯

27. 'ಶ್ರಾವಣ' ಕವನದಲ್ಲಿ ಕವಿ ಯಾವುದರ ಸೌಂದರ್ಯವನ್ನು ವರ್ಣಿಸಿದ್ದಾರೆ?
ಅ) ಧಾರವಾಡದ ಬ) ಬೆಂಗಳೂರಿನ
ಕ) ನಿಸರ್ಗದ ಡ) ಬೆಳಗಾವಿಯ

28. ಶ್ರೀ ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಮೊದಲಬಾರಿ ಜೋಗ ಜಲಪಾತದ ಎದುರು ನಿಂತಾಗ ಹೇಳಿದ್ದು:
ಅ) ಎಷ್ಟೊಂದು ಬೆಳೆ ಪೋಲಾಗುತ್ತಿದೆ
ಬ) ಎಷ್ಟೊಂದು ಸಮಯ ಪೋಲಾಗುತ್ತಿದೆ
ಕ) ಎಷ್ಟೊಂದು ಹಣ ಪೋಲಾಗುತ್ತಿದೆ
ಡ) ಎಷ್ಟೊಂದು ಶಕ್ತಿ ಪೋಲಾಗುತ್ತಿದೆ

29. ಶ್ರೀ ಕುವೆಂಪುರವರ ಲೇಖನ ಯಾವ ಭಾಗದ ಚಿತ್ರಣವನ್ನು ನೀಡುತ್ತದೆ?
ಅ) ಮಲೆನಾಡು ಬ) ಕರಾವಳಿ
ಕ) ಮರುಭೂಮಿ ಡ) ದೊಡ್ಡನಗರ ಪ್ರದೇಶ

30. ಶ್ರೀ ವಿಶ್ವೇಶ್ವರಯ್ಯನವರ ಭಾಷಣಕ್ಕೆ ಯಾವುದು ಸರಿಹೊಂದುವುದಿಲ್ಲ?
ಅ) ಆಲೋಚನೆಯಲ್ಲಿ ಸತ್ಯನಿಷ್ಠೆ.
ಬ) ಹಾವಭಾವ–ಮಾತಿನ ಮಂಟಪದಲ್ಲಿ ಜನರನ್ನು ಮರಳುಮಾಡುವುದು.
ಕ) ಭಾಷಣದ ಕುರಿತು ತಯಾರಿ
ಡ) ಶ್ರೋತೃವರ್ಗಕ್ಕೆ ಗೌರವ

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CBCS SCHEME

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17KKK39

Question Paper Version : A

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Kannada Kali
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [Max. Marks: 30

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the thirty questions, each question carries **ONE mark**.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, use of whiteners** on the **OMR** sheets are strictly prohibited.

Note : Fill in the blank by translating the given English word to Kannada.
[From Question No : 1 to 5]

1. He : ------
   a) NAnu b) Neenu
   c) Avanu d) AvaLu

2. When : ----------
   a) Yaanu b) Yaavaga
   c) Yelli d) Yaake

3. Teacher : ----------
   a) HuDuga b) Manushya
   c) Shikshaka/ki d) Shishya

4. Vegetable : ----------
   a) tarakari b) takararu
   c) tavaruru d) tamota

5. Garden : ---------
   a) Mane b) Shaale
   c) TooTa d) Baagilu

Note : Substitute the words from the following each sentence in appropriate place
[From Q No. 6 to 8]

6. naanu uu[illegible] maaDu
   a) maaDuttene b) maaDideya
   c) maaDisu d) maaDi

7. Namma manege baa ?
   a) Baruttiya
   b) Bandi
   c) BeDa
   d) Baru

8. Nanna hattira Kutka.
   a) KuLituko
   b) KooDu
   c) Kundru
   d) None.

Note : Write the English word for given Kannada word [From Q No. 9 to 12]

9. HaLe
   a) New
   b) Now
   c) Not
   d) Old

10. Kurci
   a) Table
   b) Book
   c) Chair
   d) Pen

11. GaNita
   a) Physics
   b) Biology
   c) Mathematics
   d) English

12. Shaale
   a) Home
   b) School
   c) Office
   d) Room.

Note : Fill in the blank choosing the right word from the group below :

13. nanage ninna sahavaasa khanDitaa ----------
   a) BeDa
   b) Beka
   c) Ide
   d) Illa.

Note : Translate the following Kannada question into English.
[from question No. 14 to 15]

14. Niivu yaaru ?
   a) who is this?
   b) what is this?
   c) who are you?
   d) what is there?

15. Idu Enu?
   a) who is this?
   b) what is this?
   c) who are you?
   d) what is there?

Note : Translate the following English words to Kannada
[from Q No. 16 to 20]

16. Near
   a) Swalpa
   b) hattira
   c) heege
   d) hosa

17. Shop
   a) AngaDi
   b) dukan
   c) kante
   d) Mane.

18. See
a) NooDu
b) MaaDu
c) BiDu
d) IDu

19. Moon
a) candra
b) Suurya
c) Naksatra
d) Boomi

20. Child
a) Maanava
b) Magu
c) MahiLe
d) HeNNu

Note : Translate the Kannada word into English.
[From Q No. 21 to 30]

21. Meenu
a) Animal
b) Fish
c) Crow
d) Owl

22. Nayee
a) Pig
b) Cow
c) Dog
d) Cat

23. Aat
a) See
b) Come
c) Go
d) Play

24. Mana
a) Home
b) School
c) Pen
d) Mind

25. Nanu
a) I
b) You
c) We
d) He

26. Maga
a) Father
b) Sister
c) Daugher
d) Son.

27. Baa
a) Go
b) Sit
c) Visit
d) Come

28. Kaagad
a) Chair
b) Computer
c) Mouce
d) Paper

29. Avanu
a) He
b) She
c) It
d) They

30. Aangla
a) Kannada
b) English
c) Marathi
d) Urdu.

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CBCS SCHEME

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Question Paper Version : B

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Kannada Kali
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [Max. Marks: 30

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the thirty questions, each question carries **ONE mark**.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, use of whiteners** on the OMR sheets are strictly prohibited.

Note : Translate the following English words to Kannada [from Q No. 1 to 5]

1. Near
   a) Swalpa b) hattira
   c) heege d) hosa

2. Shop
   a) AngaDi b) dukan
   c) kante d) Mane.

3. See
   a) NooDu b) MaaDu
   c) BiDu d) IDu

4. Moon
   a) Chandra b) Suurya
   c) Naksatra d) Boomi

5. Child
   a) Maanava b) Magu
   c) MahiLe d) HeNNu

Note : Write the English word for given Kannada word [From Q No. 6 to 9]

6. HaLe
   a) New b) Now
   c) Not d) Old