

# 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
- $$f(x) = \begin{cases} 0; & -\pi < x < 0 \\ x; & 0 < x < \pi \end{cases} \quad (08 \text{ Marks})$$
- 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	$\pi/6$	$2\pi/6$	$3\pi/6$	$4\pi/6$	$5\pi/6$	$\pi$
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 :
- $$f(x) = \begin{cases} \pi x; & 0 \leq x \leq 1 \\ \pi(2-x); & 1 \leq x \leq 2 \end{cases}$$
- 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  $0 \leq x \leq 2\pi$ . (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 :
- $$f(x) = \begin{cases} 4x; & 0 < x < 1 \\ 4-x; & 1 < x < 4 \\ 0; & x > 4 \end{cases} \quad (06 \text{ Marks})$$
- c. Find z-transforms of: i)  $a^n \sin n\theta$  ii)  $a^{-n} \cos n\theta$ . (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

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  $u_{n+2} + 6u_{n+1} + 9u_n = 2^n$ . Given  $u_0 = u_1 = 0$ . (06 Marks)

**Module-3**

- 5 a. If  $\theta$  - 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

- 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

- 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  $\int_C (x^2 + y^2) dx + 3x^2 y dy$  where C – is the circle  $x^2 + y^2 = 4$  traced in positive sense. (08 Marks)
- b. Evaluate  $\int_C (\sin z dx - \cos x dx + \sin y dx)$  by using Stokes theorem, where C – is the boundary of the rectangle  $0 \leq x \leq \pi$ ,  $0 \leq y \leq 1$  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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# CBCS SCHEME

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17EE32

## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Electric Circuit Analysis

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Find an equivalent resistance between A and B for the network given in Fig. Q1 (a) using star-delta transformation. (06 Marks)

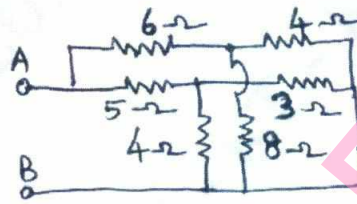


Fig. Q1 (a)

- b. Find the currents  $i_1$ ,  $i_2$  and  $i_3$  in the network given in Fig. Q1 (b) using mesh analysis. (06 Marks)

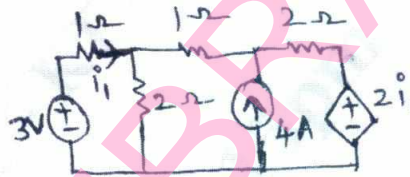


Fig. Q1 (b)

- c. Find the power dissipated in  $10\ \Omega$  resistor by nodal analysis in Fig. Q1 (c). (08 Marks)

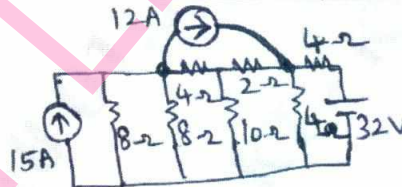


Fig. Q1 (c)

**OR**

- 2 a. Distinguish between (i) Active and Passive elements (ii) Ideal and practical sources. (04 Marks)
- b. Find the node voltage  $V_1$ ,  $V_2$  and  $V_3$  in the circuit diagram shown in Fig. Q2 (b) using nodal analysis. (08 Marks)

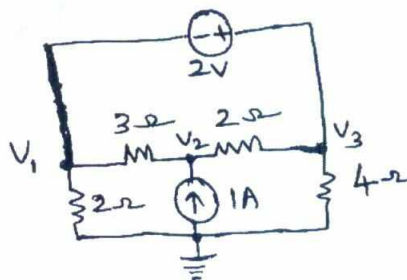


Fig. Q2 (b)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
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- c. Find the current  $i_a$  in the circuit given in Fig. Q2 (c) using mesh analysis. (08 Marks)

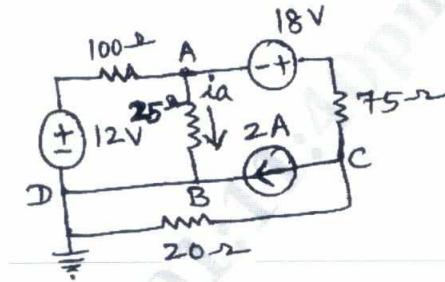


Fig. Q2 (c)

**Module-2**

- 3 a. State and explain super position theorem. (06 Marks)  
 b. Find the Thevenin's voltage, short circuit current and determine the actual current flowing through the  $6\ \Omega$  resistor in the network given in Fig. Q3 (b). (07 Marks)

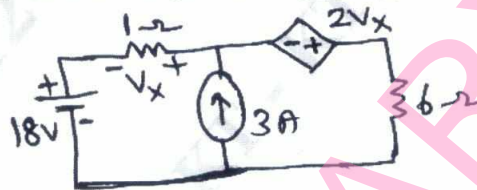


Fig. Q3 (b)

- c. Find the current through  $16\ \Omega$  resistor in the network given in Fig. Q3 (c) using Norton's theorem. (07 Marks)

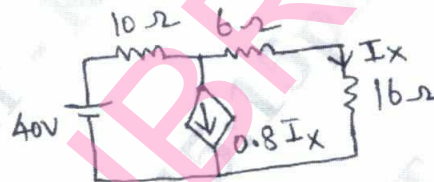


Fig. Q3 (c)

**OR**

- 4 a. Verify the reciprocity theorem for the voltage  $V$  and current  $I$  in the network given in Fig. Q4 (a). (08 Marks)

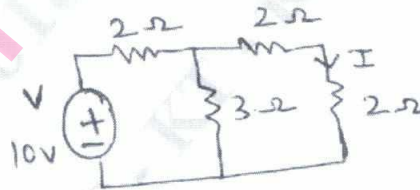


Fig. Q4 (a)

- b. Find the value of load resistance  $R_L$  when maximum power is transferred across it in the network shown in Fig. Q4 (b). (04 Marks)

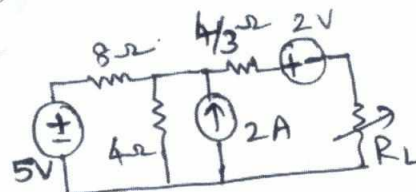


Fig. Q4 (b)

- c. Find the current through  $R_L$  using Thevenin's theorem for the network in the Fig. Q4 (c). (08 Marks)

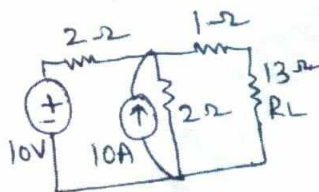


Fig. Q4 (c)

**Module-3**

- 5 a. Derive expression for resonant frequency in series RLC circuit. (06 Marks)  
 b. A series RLC circuit has  $R = 4 \Omega$ ,  $L = 1 \text{ mH}$  and  $C = 10 \mu\text{F}$ . Calculate Q factor, bandwidth, resonant frequency and half power frequencies. (08 Marks)  
 c. Find the equation of current if the switch is closed at  $t = 0$ . Find also the voltage across L and R, the current at  $t = 0.1 \text{ sec}$  and the time at which the voltage across L and R are equal in the Fig. Q5 (c). (06 Marks)

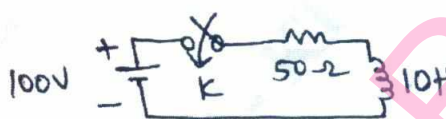


Fig. Q5 (c)

OR

- 6 a. Find  $I_o$ ,  $I_C$ ,  $I_L$ , Q factor, resonant frequency and parallel resonance for the parallel resonant circuit shown in Fig. Q6 (a). (08 Marks)

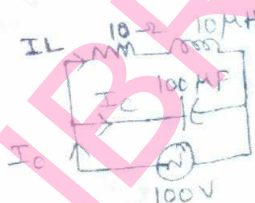


Fig. Q6 (a)

- b. In the Fig. Q6 (b), the switch S is closed at  $t = 0$ , find the time when the current from the battery reaches to 500 mA. (08 Marks)

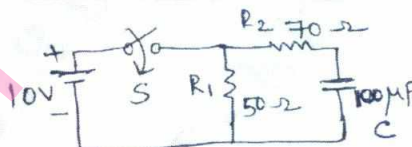


Fig. Q6 (b)

- a. What are the initial conditions and their use in network analysis? (04 Marks)

**Module-4**

- 7 a. State and prove initial value theorem and final value theorem. (08 Marks)  
 b. Find the Laplace transform of the, (i)  $f(t) = 5 + 4e^{-2t}$  (ii)  $e^{-at} \sin \omega t$  (04 Marks)  
 c. Obtain the Laplace transform of the function shown in Fig. Q7 (c). (08 Marks)

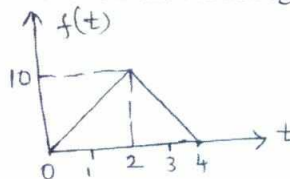


Fig. Q7 (c)

OR

- 8 a. Find the inverse Laplace transform,
- (i)  $\frac{s^2 + 5}{s(s^2 + 4s + 4)}$       (ii)  $\frac{2s + 6}{s^2 + 6s + 25}$       (06 Marks)
- b. Obtain Laplace transform of,
- (i)  $f(t) = 5(t - 2)u(t - 1)$
- (ii)  $f(t) = 4e^{-3t}[u(t + 2) - u(t - 2)]$
- (iii)  $\delta(t)$
- (iv)  $u(t)$       (08 Marks)
- c. Sketch the waveforms,
- (i)  $tu(t - T)$       (ii)  $(t - T)u(t - T)$       (iii)  $u(-t)$       (iv)  $tu(t + T)$       (06 Marks)

**Module-5**

- 9 a. Determine the line currents and total power supplied to a delta connected load of  $Z_{ab} = 10\angle 60^\circ \Omega$ ,  $Z_{bc} = 20\angle 90^\circ \Omega$  and  $Z_{ca} = 25\angle 30^\circ \Omega$ . Assume a 3 phase, 400 V, ABC system.      (08 Marks)
- b. Define Z and Y parameters.      (04 Marks)
- c. Find the Z parameters of the network shown in Fig. Q9 (c).      (08 Marks)

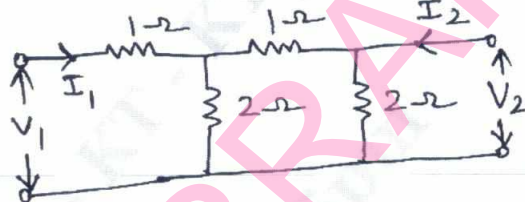


Fig. Q9 (c)

OR

- 10 a. Determine the line currents in an unbalanced star connected load supplied from a symmetrical 3 phase, 440 V system. The branch impedances are  $Z_R = 4\angle 30^\circ \Omega$ ,  $Z_Y = 10\angle 45^\circ \Omega$  and  $Z_B = 10\angle 60^\circ \Omega$ . The phase sequence is RYB.      (08 Marks)
- b. Find Y-parameters for the network shown in Fig. Q10 (b)      (08 Marks)

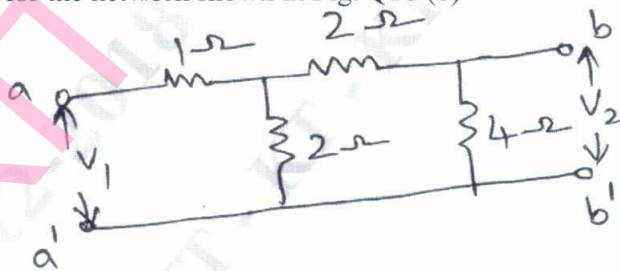


Fig. Q10 (b)

- c. Write the conditions for symmetry and reciprocity of Z and Y parameters of a two port network.      (04 Marks)

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## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Transformers and Generators

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Draw and explain the full load phasor diagrams of  $1\phi$  transformers for lagging leading and upf load. (07 Marks)
- b. How all day efficiency is different from standard efficiency? Briefly explain. (06 Marks)
- c. A 5KVA 200/1000V, 50Hz,  $1\phi$  transformer gave the following test results :  
 OC Test (LV side) : 200V, 1.2A, 90W  
 SC Test (HV side) : 50V, 5A, 110W  
     i) Calculate the parameters of the equivalent circuit referred to the LV side.  
     ii) Calculate the output secondary voltage  
 When delivering 3kW at 0.8pf lagging, the input primary voltage being 200V. Find the percentage regulation also. (07 Marks)

OR

- 2 a. Enumerate the advantages of  $3\phi$  transformers compare to  $1\phi$  transformers. (06 Marks)
- b. Show that open Delta connection of  $3\phi$  transformers has KVA rating of 57.7% of that of  $\Delta$ - $\Delta$  connection. Show the connection diagram. (07 Marks)
- c. Two  $1\phi$  furnaces working at 100V are connected to 3300V,  $3\phi$  mains through Scott connected transformers. Calculate the current in each line of the  $3\phi$  mains when the power taken by each furnace is 400kW at a pf of 0.8 lagging Neglect losses in the transformers. (07 Marks)

### Module-2

- 3 a. What are the conditions to be satisfied for parallel operation of two transformers? Explain briefly. (06 Marks)
- b. Derive expression for load shared between two transformers connected in parallel when voltage ratios are different. (07 Marks)
- a. Explain how stabilization is achieved due to the tertiary winding. (07 Marks)

OR

- 4 a. With the help of sketches explain the working of on load tap changer. (07 Marks)
- b. Derive expression for saving of copper in auto transformer compared to two winding transformer. (07 Marks)
- c. Two  $1\phi$  transformers with equal turns have impedances of  $(0.5 + j3)\Omega$  and  $(0.6 + j10)\Omega$  with respect to the secondary. If they operate in parallel, determine how they will share a total load of 100kW at pf 0.8 lagging. (06 Marks)

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**Module-3**

- 5 a. Write a short note on Noise in transformers. (06 Marks)  
 b. Explain the methods used to reduce harmonics in 3 $\phi$  alternators. (06 Marks)  
 c. What is commutation? What are the methods available for improving commutation? Explain briefly. (08 Marks)

**OR**

- 6 a. Derive EMF equation of an 3 $\phi$  Alternator. (06 Marks)  
 b. What is an armature reaction? With a neat diagram, explain armature reaction in DC machine under normal working conditions. (08 Marks)  
 c. With a vector diagram, explain synchronous reactance of an alternator. (06 Marks)

**Module-4**

- 7 a. Define voltage regulation of an alternator and explain its significance with a vector diagram. (06 Marks)  
 b. What is synchronization of alternators? What are the conditions for proper synchronization of an alternator? How 3 $\phi$  alternators are synchronized? (08 Marks)  
 c. Write a short notes on power angle characteristics of an alternator. (06 Marks)

**OR**

- 8 a. With a neat circuit diagram, explain slip test to determine direct axis reactance and quadrature axis reactance of a salient pole synchronous Generator. (07 Marks)  
 b. Explain the behaviour of synchronous generator on no load under variable excitation connected to infinite bus bar. (06 Marks)  
 c. With a phasor diagram, explain the concept of two reaction theory in a salient pole alternator. (07 Marks)

**Module-5**

- 9 a. Enumerate the methods available for determining the voltage regulation of an alternator, explain mmf methods in detail. (10 Marks)  
 b. A 3.5 MVA, Y – connected alternator rated at 4160V at 50Hz has the OCC given by the following data :

$I_f$ in amps	50	100	150	200	250	300	350	400	450
$V_{oc}$ (line) in volts	1620	3150	4160	4750	5130	5370	5550	5650	5750

a field current of 200A is found necessary to circulate  $I_{FL}$  on SC of the alternator. Calculate by i) EMF method ii) MMF method. The voltage regulation at full load 0.8 pf lagging. Neglect resistance, comment on result obtained. (10 Marks)

**OR**

- 10 a. Write a note on capability curves of synchronous generator. (06 Marks)  
 b. What is hunting in synchronous machines? Explain the role of damper winding. (07 Marks)  
 c. Explain ZPF method of predetermination of regulation of alternator. (07 Marks)

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## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Analog Electronic Circuits

Time: 3 hrs.

Max. Marks: 100

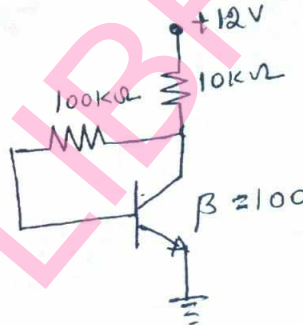
**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. Draw a double ended clipper circuit and explain its working principle with transfer characteristics. (07 Marks)
- b. Draw and explain the working of clamper circuit which clamps the positive peak of a signal to zero. (07 Marks)
- c. With suitable graph, explain the significance of operating point. (06 Marks)

OR

- 2 a. Derive the expression for stability factor for fixed bias circuit, with respect to  $I_{CO}$ ,  $V_{BE}$  and  $\beta$ . (07 Marks)
- b. A voltage divider biased circuit has  $R_1 = 39k\Omega$ ,  $R_2 = 82k\Omega$ ,  $R_C = 3.3k\Omega$ ,  $R_E = 1k\Omega$  and  $V_{CC} = 18V$ . The Silicon transistor used has  $\beta = 120$ . Find Q-point and stability factor. (08 Marks)
- c. Calculate the Q point values ( $I_C$  and  $V_{CE}$ ) for the circuit given in Fig Q2(c). (05 Marks)



### Module-2

- 3 a. State and prove Millers theorem. (08 Marks)
- b. Starting from fundamentals define h-parameters and obtain an h-parameter equivalent circuit of common emitter configuration. (08 Marks)
- c. Compare the characteristics of CB, CE and CC configurations. (04 Marks)

OR

- 4 a. Derive an expression for input impedance, voltage gain, current gain and output impedance for an emitter follower circuit using h-parameter model for the transistor. (08 Marks)
- b. For the transistor connected in CE configuration, determine  $A_v$ ,  $A_i$ ,  $R_i$  and  $R_o$  using complete hybrid equivalent model.  
Given  $R_L = R_E = 1k\Omega$ ,  $h_{ie} = 1k\Omega$ ,  $h_{re} = 2 \times 10^{-4}$ ,  $h_{fe} = 100$  and  $h_{oe} = 20\mu A/V$  (08 Marks)
- c. A transistor in CE mode has h-parameters  
 $h_{ie} = 1.1k\Omega$ ,  $h_{re} = 2 \times 10^{-4}$ ,  $h_{fe} = 100$  and  $h_{oe} = 25\mu A/V$ . Determine the equivalent CB parameters. (04 Marks)

Module-3

- 5 a. Draw the circuit of Darlington emitter follower. Derive the expression for current gain using its ac equivalent circuit. (08 Marks)
- b. What are the advantages of negative feedback in amplifiers? Explain briefly. (06 Marks)
- c. For the voltage series feedback amplifier, derive an expression for output impedance. (06 Marks)

OR

- 6 a. Explain the need of cascading amplifier. Draw and explain the block diagram of two stage cascade amplifier. (08 Marks)
- b. A given amplifier arrangement has the following voltage gains  $A_{V_1} = 10$   $A_{V_2} = 20$  and  $A_{V_3} = 40$ . Calculate the overall voltage gain and determine the total voltage gain in dBs. (06 Marks)
- c. An amplifier with negative feedback has a voltage gain of 120. It is found that without feedback an input signal of 60mV is required to produce a particular output, whereas with feedback the input signal must be 0.5V to get the same output. Find voltage gain ( $A_V$ ) and  $\beta$  of the amplifier. (06 Marks)

Module-4

- 7 a. Derive an expression for frequency of oscillations in Wien bridge oscillator. (08 Marks)
- b. Explain the operation of class B push pull amplifier. Prove that the maximum efficiency of class B configuration is 78.5%. (08 Marks)
- c. A crystal has following parameters.  $L = 0.3344\text{H}$ ,  $C = 0.065\text{pF}$ ,  $C_m = 1\text{pF}$  and  $R = 5.5\text{k}\Omega$ . Calculate: i) Series resonance frequency ii) Parallel resonance frequency. (04 Marks)

OR

- 8 a. Explain the operation of class A transformer coupled power amplifier and prove that the maximum efficiency is 50%. (08 Marks)
- b. A class B push pull amplifier operating with  $V_{CC} = 25\text{V}$  provides a 22V peak signal to  $8\Omega$  load. Calculate circuit efficiency and power dissipated per transistor. (06 Marks)
- c. Explain the principle of operation of oscillator and the effect of loop gain ( $A\beta$ ) on the output of oscillator. (06 Marks)

Module-5

- 9 a. With the help of neat diagram, explain the working and characteristics of N-channel JFET. (08 Marks)
- b. Determine  $Z_i$ ,  $Z_o$  and  $A_V$  for JFET common source amplifier with fixed bias configuration using AC equivalent small signal model. (08 Marks)
- c. Write down the differences between BJT and JFET. (04 Marks)

OR

- 10 a. With the help of neat diagrams, explain the construction, working and characteristics of N-channel depletion type MOSFET. (10 Marks)
- b. Write down the differences between MOSFET and JFET. (04 Marks)
- c. For the circuit given in the Fig Q10(c), determine: i) Input impedance ii) Output impedance and iii) voltage gain. (06 Marks)

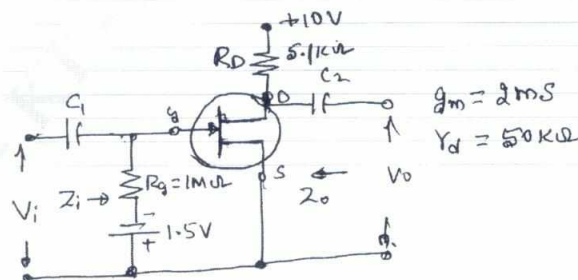


Fig Q10(c)

\*\*\*2 of 2\*\*

# CBCS SCHEME

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17EE35

## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Digital System Design

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Define canonical minterm form and canonical maxterm form. (05 Marks)
- b. Compare between prime implicant and essential prime implicant. Identify all the prime implicants and essential prime implicants of the following functions using k-map :  
 $f(a, b, c, d) = \pi_M (0, 2, 3, 8, 9, 10, 12, 14)$ . (07 Marks)
- c. Simplify the following boolean function using k-map, and implement by logic gates.  
 $f(A, B, C, D, E) = \sum_m (3, 7, 10, 11, 12, 13, 14, 15, 17, 19, 21, 23, 25, 27, 28, 29, 31) + \sum_d (2, 6, 26, 30)$  (08 Marks)

OR

- 2 a. Convert the given boolean function into minterm canonical form.  
 $f(a, b, c) = (\bar{a} + b)(b + \bar{c})$ . (05 Marks)
- b. Simplify the following boolean function using k-map  
 $f(P, Q, R, S) = \sum_m (0, 2, 4, 5, 6, 8, 10, 15) + \sum_d (7, 13, 14)$ . (07 Marks)
- c. Using Quine – McCluskey method, obtain a minimal SOP expression for  
 $f(a, b, c, d) = \sum_m (2, 3, 4, 5, 13, 15) + \sum_d (8, 9, 10, 11)$ . (08 Marks)

### Module-2

- 3 a. Design two bit magnitude comparator and draw the logic diagram. (10 Marks)
- b. Write a short note on encoders. (05 Marks)
- c. Design full adder using two numbers of 4:1 MUX. (05 Marks)

OR

- 4 a. Explain look ahead carry adder. (10 Marks)
- b. Implement following multiple output function using IC74138 and external gates.  
 $F_1 (A, B, C) = \sum_m (1, 4, 5, 7)$  and  $F_2 (A, B, C) = \pi_m (2, 3, 6, 7)$ . (05 Marks)
- c. Design 16:1 multiplexer using 8:1 MUX. (05 Marks)

### Module-3

- 5 a. Explain the working of master slave JK flip-flops with functional table and timing diagram. Show how race around condition is overcome. (08 Marks)
- b. Obtain characteristic equation of SR flip-flop. (05 Marks)
- c. Explain working of 3-bit binary ripple counter with the suitable logic and timing diagram. (07 Marks)

OR

- 6 a. Convert JK flip-flop to D flip flop. (05 Marks)
- b. Explain the 4 modes of operation of shift register with suitable logic diagram and truth table. (08 Marks)
- c. Design MOD – 6 synchronous counter using D flip-flop. (07 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

**Module-4**

- 7 a. Analyze the following sequential circuit given in Fig Q7(a) and obtain excitation, transition and state table. Also write the state diagram.

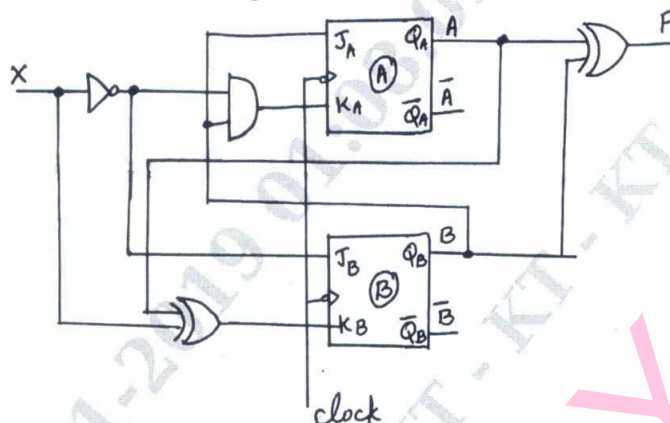


Fig Q7(a) (12 Marks)

- b. Design a synchronous counter with the sequence 0, 1, 3, 7, 6, 4, 0 . . . . . using JK flip-flop. (08 Marks)

**OR**

- 8 a. Design a clocked sequential circuit that operates according to the state diagram shown in Fig Q8 (a) implement the circuit using D flip flop.

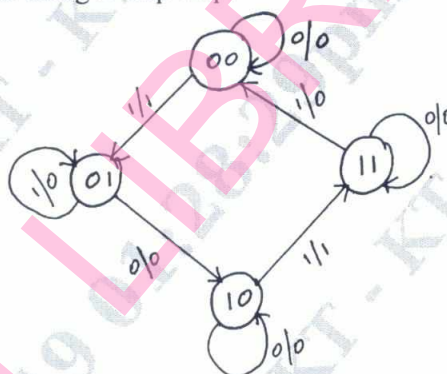


Fig Q8(a) (12 Marks)

- b. With the help of block diagram explain Mealy and Moore model in a sequential circuit analysis. Give the example circuits. (08 Marks)

**Module-5**

- 9 a. Write the comparison between VHDL and verilog. (08 Marks)  
 b. Explain the various data types available in VHDL. (06 Marks)  
 c. Write HDL code of a 2 × 1 multiplexer – VHDL. (06 Marks)

**OR**

- 10 a. Write a data flow description for a full adder with active high enable in both VHDL and verilog. (08 Marks)  
 b. Explain shift and rotate operators in HDL with an example. (08 Marks)  
 c. Explain the structure of verilog module. (04 Marks)

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17EE36

## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Electrical and Electronic Measurements

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. List the limitations of wheatstone Bridge and explain how low resistance is measured by KDB. (08 Marks)
- b. With a neat circuit diagram derive the balancing equation for Maxwell Inductance – Capacitance Bridge. (06 Marks)
- c. A Maxwell's capacitance bridge shown in Fig Q1(c) is used to measure an unknown inductance in comparison with capacitance. The various values at balance,  $R_2 = 400\Omega$ ;  $R_3 = 600\Omega$ ,  $R_4 = 1000\Omega$ ;  $C_4 = 0.5\mu\text{F}$ . Calculate the values of  $R_1$  and  $L_1$  calculate also the value of storage (Q) factor of coil if frequency is 1000 Hz. (06 Marks)

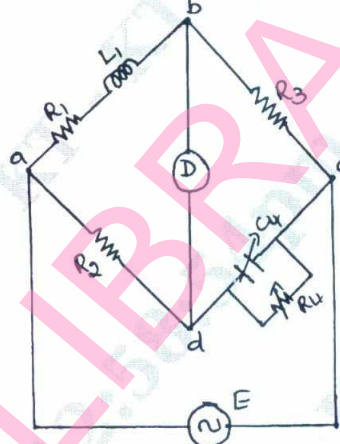


Fig Q1(c)

OR

- 2 a. Explain in brief fall of potential method for earth resistance measurement. (08 Marks)
- b. Describe the working of Schering bridge. Derive the equation for capacitance and dissipation factor. Draw the phasor diagram of the bridge under balance conditions. (12 Marks)

### Module-2

- 3 a. Explain the construction and working principle of electro-dynamometer Wattmeter for the measurement of power in the circuit. (08 Marks)
- b. Discuss the constructional features and working principle of rotating type phase sequence indicator. (06 Marks)
- c. A three phase induction motor draws a power input at a voltage of 250V, 20A, and 0.8 power factor lag; Find percentage error in wattmeter reading if,  
i) Pressure coil is on supply side ii) Current coil is on supply side. Assume current coil resistance and pressure coil resistance =  $0.2\Omega$  and  $5000\Omega$ . (06 Marks)

OR

- 4 a. Explain the error in a LPF Wattmeter and give the adjustments done to compensate for the error. (08 Marks)
- b. Explain the working principle of Weston frequency meter. (06 Marks)
- c. A 250V, single phase energy meter has a constant load of 5A passing through it for 8 hours at 0.8pf. If the disc makes 3200 revolutions during this period, what is Energy meter constant in revolutions per kilo-watt-hour? Calculate the pf of the load, if the number of revolutions made by the energy meter is 600, when operating at 250V, 6A for 2 hrs. (06 Marks)

Module-3

- 5 a. Explain the construction and theory of instrument transformer. (06 Marks)
- b. Explain the characteristics of current transformer. (08 Marks)
- c. Explain the measurement of magnetizing force (H). (06 Marks)

OR

- 6 a. What is shunt? How it is used to extend the range of an ammeter. (06 Marks)
- b. With neat circuit diagram, explain Silsbee's method of testing C.T. (08 Marks)
- c. Explain the measurement of leakage factor using search coil. (06 Marks)

Module-4

- 7 a. With a block diagram, explain the working of a true R.M.S responding voltmeter. (08 Marks)
- b. With a block diagram, explain the working of a Ramp type DVM. (08 Marks)
- c. List the advantages of electronic energy meter over the conventional energy meter. (04 Marks)

OR

- 8 a. List the performance characteristics of a Digital voltmeter. (07 Marks)
- b. With a neat sketch, explain the working of the Q-meter. (07 Marks)
- c. With a neat block diagram, explain the principle of working of electronic energy meter. (06 Marks)

Module-5

- 9 a. Explain LED and LCD displays. (10 Marks)
- b. Write short note on nixie tube. (05 Marks)
- c. Write a short note on strip-chart recorder. (05 Marks)

OR

- 10 a. Write a short note on types of segment displays. (06 Marks)
- b. With a neat sketch, explain the working of a X-Y recorder. (08 Marks)
- c. Write a short note on Null balance recorders. (06 Marks)

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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.

- 
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) 61<sup>st</sup> Constitution Amendment
  - b) 74<sup>th</sup> Constitution Amendment
  - c) 86<sup>th</sup> Constitution Amendment
  - d) 91<sup>st</sup> 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  $\lambda$ . (06 Marks)
- c. Find  $\lambda$ , 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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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 ಪಶ್ಚಿಮ 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.

1. ಶ್ರೀ ಸಿದ್ಧಲಿಂಗಯ್ಯನವರ 'ಬೆಳ್ಳಿಯ 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) ಅಧಣಿ  
ಕ) ಅಫಜಲಪುರ ಡ) ಕೊಳ್ಳೆಗಾಲ

4. 'ಶ್ರೀ ಸಂಗೊಳ್ಳಿ ರಾಯಣ್ಣ' ಯಾರು?  
 ಅ) ಅದ್ಭುತ ಭಾಷಣಕಾರ ಬ) ವಂದಿಮಾಗಧರಿಗೆ ಸೇರಿದವನು  
 ಕ) ಬ್ಯಾಂಕಗಳಿಗೆ ಮೋಸ ಮಾಡಿದವನು ಡ) ಬ್ರಿಟಿಷರ ವಿರುದ್ಧ ಹೋರಾಡಿದ ಹೋರಾಟಗಾರ
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) ಸೃಷ್ಟಿ ಮಾಹಿತಿ ಬ) ನೇರ ನಿರೂಪಣೆ  
 ಕ) ಸೌಜನ್ಯ ಡ) ಮೇಲಿನ ಎಲ್ಲವು
8. ಸಚಿವ + ಆಲಯ = ಸಚಿವಾಲಯ, ಇಲ್ಲಿರುವ ಸಂಧಿ :  
 ಅ) ಸುವರ್ಣ ಸಂಧಿ ಬ) ಸರ್ವಣ ಧೀರ್ಘ 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.ಎಫ್‌ಗೆ ಹೋಗಿದ್ದೆನು' ಈ ವಾಕ್ಯದಲ್ಲಿರುವ ಕಾಲ :  
 ಅ) ಭೂತ ಕಾಲ ಬ) ರಾಜಯೋಗ ಕಾಲ  
 ಕ) ಯಮಗಂಡ ಕಾಲ ಡ) ರಾಹು ಕಾಲ
12. 'ಫೋಟೋಗ್ರಾಫಿ' 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 ಹುಡುಗಿಯರ 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 ಕಂಪೋಷಿಷನ ಚೆನ್ನಾಗಿದೆ' ಎನ್ನುವ ವಾಕ್ಯದಲ್ಲಿ ಕಂಪೋಷಿಷನ 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) ಖೆಡ್ಡಾಗಳ 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 ರೀತಿ ಯಾಗಿದೆ?  
 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) ದುಃಖ  
 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 'ಗುಬ್ಬಿಚ್ಚಿಗೂಡು' 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 ಬಾಷಣಕ್ಕೆ ಯಾವುದು ಸರಿಹೊಂದುವುದಿಲ್ಲ?  
 ಅ) ಆಲೋಚನೆಯಲ್ಲಿ ಸತ್ಯನಿಷ್ಠೆ.  
 ಬ) ಹಾವಭಾವ-ಮಾತಿನ ಮಂಟಪದಲ್ಲಿ ಜನರನ್ನು ಮರಳುಮಾಡುವುದು.  
 ಕ) ಭಾಷಣದ ಕುರಿತು ತಯಾರಿ  
 ಡ) ಶೋತೃವರ್ಗಕ್ಕೆ ಗೌರವ

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# CBCS SCHEME

17KKK39

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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 uuTa maaDu  
a) maaDuttens  
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) KooDir  
 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. manege 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  
 c) BiDu  
 b) MaaDu  
 d) IDu
19. Moon  
 a) candra  
 c) Naksatra  
 b) Suurya  
 d) Boomi
20. Child  
 a) Maanava  
 c) MahiLe  
 b) Magu  
 d) HeNNu

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

21. Meenu  
 a) Animal  
 c) Crow  
 b) Fish  
 d) Owl
22. Nayee  
 a) Pig  
 c) Dog  
 b) Cow  
 d) Cat
23. Aat  
 a) See  
 c) Go  
 b) Come  
 d) Play
24. Mana  
 a) Home  
 c) Pen  
 b) School  
 d) Mind
25. Nanu  
 a) I  
 c) We  
 b) You  
 d) He
26. Maga  
 a) Father  
 c) Daughter  
 b) Sister  
 d) Son
27. Eaa  
 a) Go  
 c) Visit  
 b) Sit  
 d) Come
28. Kaagad  
 a) Chair  
 c) Mouce  
 b) Computer  
 d) Paper
29. Avanu  
 a) He  
 c) It  
 b) She  
 d) They
30. Aangla  
 a) Kannada  
 c) Marathi  
 b) English  
 d) Urdu.

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# CBCS SCHEME

17KKK39

USN

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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) karte  
d) Mane.
3. See  
a) NooDu  
b) MaaDu  
c) BiDu  
d) HDu
4. Moon  
a) andra  
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