

CBCS SCHEME

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17MAT31

Third Semester B.E. Degree Examination, June/July 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. Obtain the fourier series of the function $f(x) = x - x^2$ in $-\pi \leq x \leq \pi$ and hence deduce $\frac{\pi^2}{12} = \frac{1}{1^2} - \frac{1}{2^2} + \frac{1}{3^2} - \frac{1}{4^2} + \dots$ (08 Marks)
- b. Obtain the Half Range Fourier cosine series for the $f(x) = \sin x$ in $[0, \pi]$. (06 Marks)
- c. Obtain the constant term and the coefficients of first sine and cosine terms in the fourier expansion of y given

x :	0	1	2	3	4	5
y :	9	18	24	28	26	20

(06 Marks)

OR

- 2 a. Obtain the fourier series of $f(x) = \frac{\pi - x}{2}$ in $[0, 2\pi]$ and hence deduce that $\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \dots$ (08 Marks)
- b. Find the fourier half range cosine series of the function $f(x) = 2x - x^2$ in $[0, 3]$. (06 Marks)
- c. Express y as a fourier series upto first harmonic given

x :	0	30	60	90	120	150	180	210	240	270	300	330
y :	1.8	1.1	0.30	0.16	1.5	1.3	2.16	1.25	1.3	1.52	1.76	2.0

(06 Marks)

Module-2

- 3 a. Find the fourier transform of $f(x) = \begin{cases} a^2 - x^2; & |x| \leq a \\ 0 & ; |x| > a \end{cases}$ and hence deduce $\int_0^a \frac{\sin x - x \cos x}{x^3} dx = \frac{\pi}{4}$ (08 Marks)
- b. Find the fourier sine transform of $e^{-|x|}$ and hence evaluate $\int_0^{\infty} \frac{x \sin ax}{1+x^2} dx; a > 0$ (06 Marks)
- c. Obtain the z-transform of $\cos n\theta$ and $\sin n\theta$. (06 Marks)

OR

- 4 a. Find the fourier transform of $f(x) = xe^{-|x|}$. (08 Marks)
- b. Find the fourier cosine transform of $f(x)$ where

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

(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.

- c. Solve $u_{n+2} + 6u_{n+1} + 9u_n = 2^n$ with $u_0 = u_1 = 0$ using z-transform. (06 Marks)

Module-3

- 5 a. Fit a straight line $y = ax + b$ for the following data by the method of least squares.

x :	1	3	4	6	8	9	11	14
y :	1	2	4	4	5	7	8	9

(08 Marks)

- b. Calculate the coefficient of correlation for the data:

x :	92	89	87	86	83	77	70	63	53	50
y :	86	83	91	77	68	85	54	82	37	57

(06 Marks)

- c. Compute the real root of $x \log_{10} x - 1.2 = 0$ by the method of false position. Carry out 3 iterations in (2, 3). (06 Marks)

OR

- 6 a. Fit a second degree parabola to the following data $y = a + bx + cx^2$.

x :	1	1.5	2	2.5	3	3.5	4
y :	1.1	1.3	1.6	2	2.7	3.4	4.1

(08 Marks)

- b. If θ is the angle between two regression lines, show that

$$\tan \theta = \left(\frac{1-r^2}{r} \right) \frac{\sigma_x \sigma_y}{\sigma_x^2 + \sigma_y^2}; \text{ explain significance of } r=0 \text{ and } r=\pm 1. \quad (06 \text{ Marks})$$

- c. Using Newton Raphson method, find the real root of the equation $3x = \cos x + 1$ near $x_0 = 0.5$. Carry out 3 iterations. (06 Marks)

Module-4

- 7 a. From the following table, estimate the number of students who obtained marks between 40 and 45.

Marks :	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
No. of students	31	42	51	35	31

(08 Marks)

- b. Use Newton's dividend formula to find $f(9)$ for the data:

x :	5	7	11	13	17
f(x) :	150	392	1452	2366	5202

(06 Marks)

- c. Find the approximate value of $\int_0^{\pi/2} \sqrt{\cos \theta} d\theta$ by Simpson's $\frac{1}{3}$ rd rule by dividing $\left[0, \frac{\pi}{2}\right]$ into 6 equal parts. (06 Marks)

OR

- 8 a. The area A of a circle of diameter d is given for the following values:

d :	80	85	90	95	100
a :	5026	5674	6362	7088	7854

Calculate the area of circle of diameter 105 by Newton's backward formula. (08 Marks)

- b. Using Lagrange's interpolation formula to find the polynomial which passes through the points (0, -12), (1, 0), (3, 6), (4, 12). (06 Marks)

- c. Evaluate $\int_4^{5.2} \log_e x dx$ taking 6 equal parts by applying Weddle's rule. (06 Marks)

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17EE32

Third Semester B.E. Degree Examination, June/July 2019 Electric Circuit Analysis

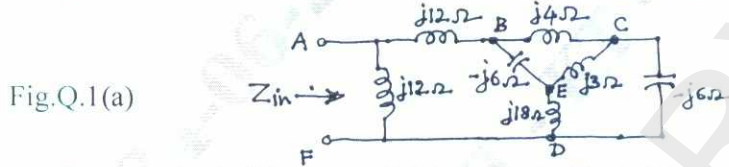
Time: 3 hrs.

Max. Marks: 100

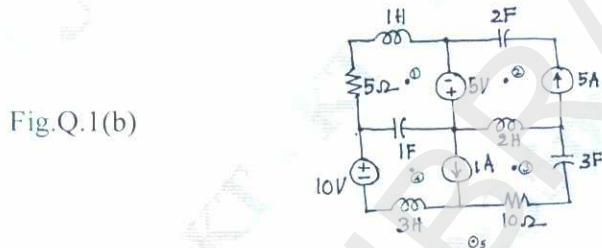
Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Find the input impedance Z_{in} for the network shown in Fig.Q.1(a) (06 Marks)



- b. Construct the exact dual of the network N_1 shown in Fig.Q.1(b) using dot method. (08 Marks)

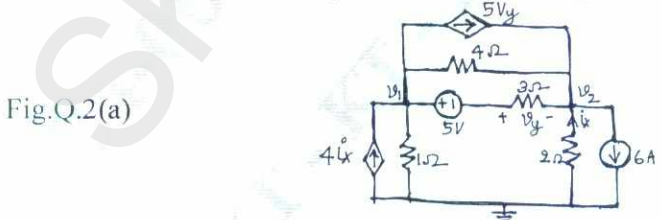


- c. Find the loop currents i_1 , i_2 and i_3 using Mesh analysis for the network shown in Fig.Q.1(c) (06 Marks)

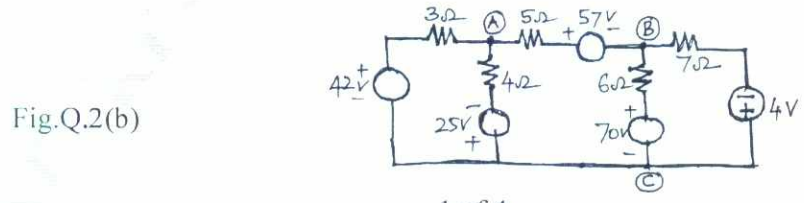


OR

- 2 a. Write a system of nodal equations for the circuit of Fig.Q.2(a) using the nodal voltages V_1 and V_2 as the variables. What power is furnished by the dependent sources? (10 Marks)



- b. Find the voltage across the 5Ω resistor of Fig.Q.2(b) using source transformation technique. (06 Marks)

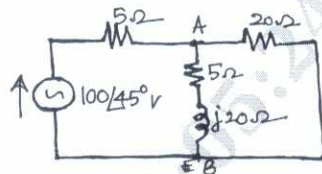


Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
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- c. For the network shown in Fig.Q.2(c). Find the voltage V_{AB} using the nodal method.

(04 Marks)

Fig.Q.2(c)

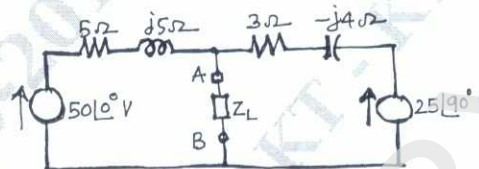


Module-2

- 3 a. In the network shown in Fig.Q.3(a) two voltage sources act on the load impedance connected to the terminals AB. If this load is variable in both reactance and resistance, what load Z_L will receive maximum power? What is the value of this maximum power?

(06 Marks)

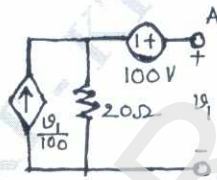
Fig.Q.3(a)



- b. For the network shown in Fig.Q.3(b), find the Thevenin's equivalent network across the terminals A and B.

(08 Marks)

Fig.Q.3(b)



- c. In the network shown in Fig.Q.3(c), determine the voltage ' V_x '. Then apply the reciprocity theorem and compare the two voltages.

(06 Marks)

Fig.Q.3(c)

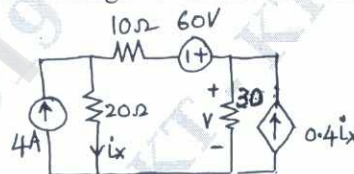


OR

- 4 a. Use superposition theorem to find voltage ' V ' in the network shown in Fig.Q.4(a) (06 Marks)

(06 Marks)

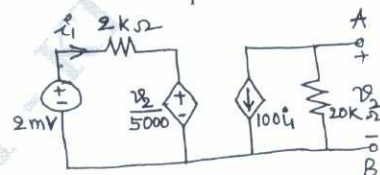
Fig.Q.4(a)



- b. Fig.Q.4(b) shows one form of the equivalent circuit of a transistor amplifier. Obtain its Thevenin's equivalent network across the output terminals 'A' and 'B'.

(08 Marks)

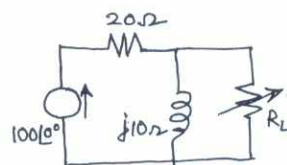
Fig.Q.4(b)



- c. Find the value of R_L of the network of Fig.Q.4(c) that will absorb a maximum power and specify the value of that power.

(06 Marks)

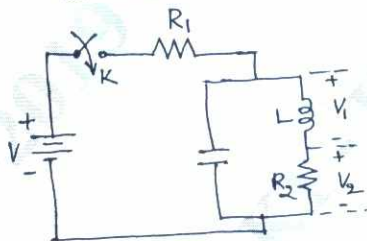
Fig.Q.4(c)



Module-3

- 5 a. A series RLC circuit has $Q_0 = 5.1$ at its resonant frequency of 100kHz. Assuming the power dissipation of the circuit is 100W when drawing a current of 0.8A, find: i) R, L, C ii) Band width (Δf) of the circuit and iii) Half-power frequencies. (08 Marks)
- b. Fig.Q.5(b) shows a network with zero capacitor voltage and zero inductor current when the switch 'K' is open. At $t = 0$ the switch 'K' is closed. Solve for i) V_1 and V_2 at $t = 0^+$ ii) $\frac{dv_1}{dt}$ and $\frac{dv_2}{dt}$ at $t = 0^+$ iii) $\frac{d^2v_2}{dt^2}$ at $t = 0^+$ (12 Marks)

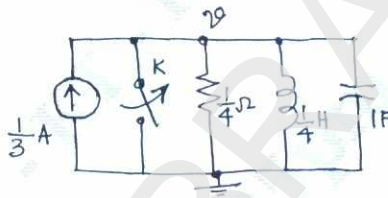
Fig.Q.5(b)



OR

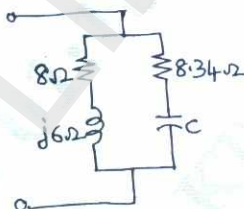
- 6 a. Fig.Q.6(a) shows a RLC parallel circuit excited by a dc current source. At $t = 0$, the switch 'K' is opened. Find $v(t)$. (12 Marks)

Fig.Q.6(a)



- b. For the circuit of Fig.Q.6(b), find the value of capacitance so that the circuit resonates at $\omega_0 = 5K$ rad/s. (08 Marks)

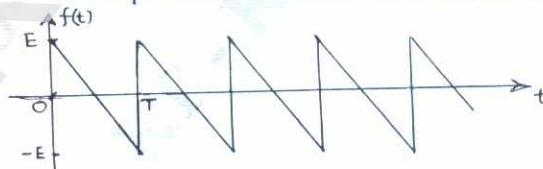
Fig.Q.6(b)



Module-4

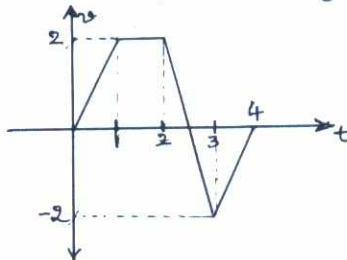
- 7 a. Find the Laplace transform of the periodic Saw tooth wave shown in Fig.Q.7(a). (12 Marks)

Fig.Q.7(a)



- b. Find the Laplace transform for the wave form shown in Fig.Q.7(b). (08 Marks)

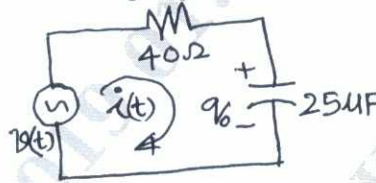
Fig.Q.7(b)



OR

- 8 a. State and prove initial – value and final – value theorems in Laplace transformation. (10 Marks)
- b. Fig.Q.8(b) shows an R-C circuit excited by a sinusoidal voltage $V(t) = 200 \sin(2000t + \phi)$. The capacitor has an initial charge of $1.25 \times 10^{-3} \text{C}$ with polarity as shown. Find the current if the circuit is switched on at $\phi = 90^\circ$, using Laplace transformation technique. (10 Marks)

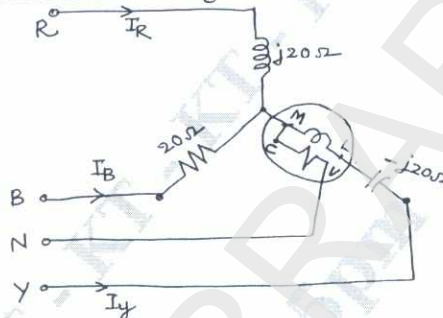
Fig.Q.8(b)



Module-5

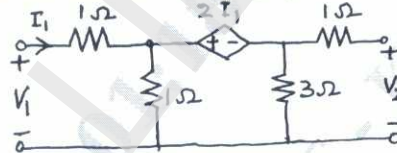
- 9 a. Find the reading on the Wattmeter in Fig.Q.9(a) when the circuit is connected to a 400V, 3- ϕ supply. The phase sequence is RYB. Neglect Wattmeter losses. (10 Marks)

Fig.Q.9(a)



- b. Obtain the y-parameters of the circuit shown in Fig.Q.9(b). Find its equivalent circuit using y-parameters and find whether the network is i) reciprocal ii) symmetrical. (10 Marks)

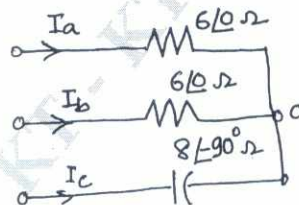
Fig.Q.9(b)



OR

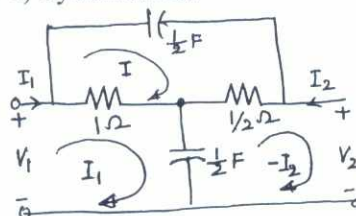
- 10 a. In a 3-phase 3-wire 400 $\angle 0^\circ$ system abc, loads $6\angle 0^\circ$, $6\angle 0^\circ$ and $8\angle -90^\circ \Omega$ are connected to phases a, b, c respectively as shown in Fig.Q.10(a). Find : i) Line currents and ii) Voltage V_{ao} , V_{bo} and V_{co} . (10 Marks)

Fig Q.10(a)



- b. Find the transmission or ABCD parameters of network shown in Fig.Q.10(b). Find whether the network is i) Reciprocal ii) Symmetrical. (10 Marks)

Fig.Q.10(b)



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17EE33

Third Semester B.E. Degree Examination, June/July 2019 Transformer and Generator

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain operation of practical transformer on no load along with neat phasor diagram. (07 Marks)
- b. With neat circuit diagram, discuss in detail how to perform OC and SC tests on single phase transformer. (08 Marks)
- c. Define voltage regulation of two winding transformer and derive condition for zero voltage regulation. (05 Marks)

OR

- 2 a. What is V-V connection? State the merits and demerits of V-V (open delta) connection. (07 Marks)
- b. Find all day efficiency of single phase transformer having maximum efficiency for 98% at 15KVA at UPF (Unity Power Factor) and loaded as follows:
12 hours – 2kW at 0.5 power factor lagging
6 hours – 12kW at 0.8 power factor lagging
6 hours – No load. (08 Marks)
- c. State the advantages of single three phase transformer over bank of single phase transformer. (05 Marks)

Module-2

- 3 a. Two single phase transformer with equal voltage ratio connected in parallel, share a load of 400kVA at power factor of 0.8 lag. Their equivalent impedance referred to secondary winding are $(1+j2.5) \Omega$ and $(1.5 + j3) \Omega$ respectively. Calculate the load shared by each transformer. (07 Marks)
- b. With neat circuit diagram, explain in detail how to perform Sumpner's test. (08 Marks)
- c. Mention the need and necessary conditions for parallel operation of two single phase transformer. (05 Marks)

OR

- 4 a. What is autotransformer? State advantages and disadvantages of autotransformer. (07 Marks)
- b. Derive an expression for saving of copper when an autotransformer is used and also mention its applications. (08 Marks)
- c. With neat diagram, describe off circuit tap changing transformer. (05 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-3

- 5 a. A 6 pole, 150 armature current dc shunt generator has 480 conductors and is wave wound. Find demagnetizing and cross magnetizing ampere turns/pole at full load if.
- Brushes are at the geometrical neutral axis (G.N.A) (07 Marks)
 - Brushes are shifted from G.N.A by 5° electrical (08 Marks)
 - Brushes are shifted from G.N.A by 5° mech. (05 Marks)
- b. What is commutation? Explain practical commutation with neat diagram of DC machine. (08 Marks)
- c. What is three winding transformer? How the stabilization is achieved due to tertiary winding. (05 Marks)

OR

- 6 a. Discuss comparison between the following in alternator
- Single layer and double layer windings (07 Marks)
 - Full pitch and fractional pitch coils. (08 Marks)
- b. What is armature reaction? With neat figures explain armature reaction in machine under normal working conditions. (05 Marks)
- c. Derive emf equation of alternators. (05 Marks)

Module-4

- 7 a. What is synchronization of alternators? State the necessary condition for synchronization. How three phase alternators are synchronized? (10 Marks)
- b. With neat circuit diagram, explain how to perform slip test on salient pole synchronous machine and indicate how X_d and X_q can be determined. (10 Marks)

OR

- 8 a. What is synchronoscope? How it is used for synchronization of alternators? (07 Marks)
- b. A 400V, 50Hz delta connected alternator has a direct axis reactance of 0.1Ω and q quadrature axis reactance of 0.07Ω per phase. The armature resistance is negligible. The alternator is supplying 1000A at 0.8pf lagging p.f. i) Find excitation emf neglecting saliency and assuming $X_d = X_q$; ii) Find the excitation emf taking into account the saliency. (08 Marks)
- c. Write a short note on V-curves on synchronous generator. (05 Marks)

Module-5

- 9 a. With neat circuit diagram, explain in detail how to perform zero power factor test and use potier reactance to determine regulation. (10 Marks)
- b. The effective resistance of 2.2kV, 50Hz, 440kVA, single phase alternator is 0.5Ω . on short circuit a field current of 40Amp gives a full load current of 200A. The emf on open circuit with the same field excitation is 1.16 KV. Find the value of synchronous impedance and find the voltage regulation at full load and i) Unity power factor ii) 0.8pf lag. (10 Marks)

OR

- 10 a. What is short circuit ratio? Explain the significance of SCR. (07 Marks)
- b. Write a short note on capability curves of synchronous generator. (08 Marks)
- c. What is hunting in synchronous machine? Explain the role of damper winding. (05 Marks)

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17EE34

Third Semester B.E. Degree Examination, June/July 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. With a neat circuit diagram, explain Emitter stabilized bias circuit, write the necessary equation. (08 Marks)
- b. Determine output voltage for the following circuit in Fig.Q.(b). Assume $f = 1000\text{Hz}$ and ideal diode. (06 Marks)

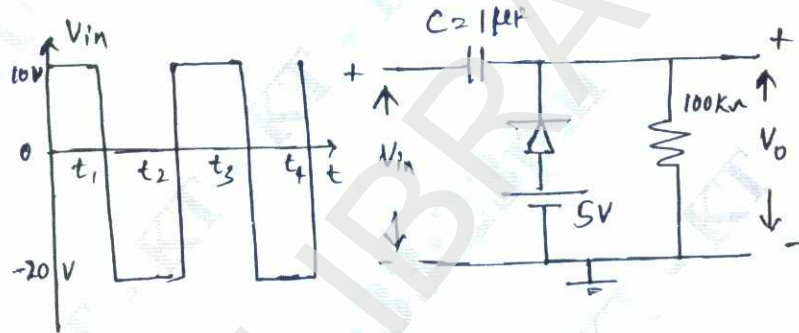


Fig.Q.1(b)

- c. Derive the expression for stability factors of fixed bias circuit with respect to I_{CO} , V_{BE} , β and draw the circuit diagram. (06 Marks)

OR

- 2 a. Explain the circuit of a transistor switch being used as an inverter. (06 Marks)
- b. Determine the voltage V_{CE} and the current I_C for the voltage divider configuration Given: $R_1 = 39\text{K}\Omega$, $R_2 = 3.9\text{K}\Omega$, $R_C = 10\text{K}\Omega$, $R_E = 1.5\text{K}\Omega$, $C_E = 50\mu\text{F}$, $B = 100$, $V_{BE} = 0.7$. (08 Marks)
- c. Sketch the output waveform for the network shown in Fig.Q.2(c). If the peak value of the a.c input is 15 V and draw the transfer characteristics. (06 Marks)

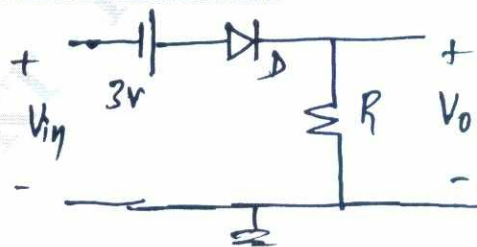


Fig.Q.2(c)

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Module-2

- 3 a. With a neat circuit diagram, derive an expression for Z_i , Z_o and A_v of fixed bias circuit using r_e – model. (08 Marks)
- b. For the Emitter follower network shown in Fig.Q.3(b). Determine r_e , Z_i , Z_o and A_v . (06 Marks)

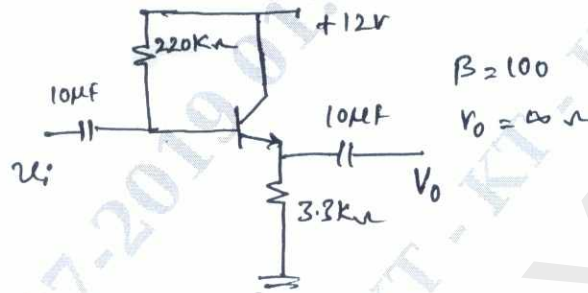


Fig.Q.3(b)

- c. Prove that Miller effect of input capacitance $C_{Mi} = (1-A_v)C_f$ and output capacitance $C_{Mo} = \left(1 - \frac{1}{A_v}\right)C_f$. (06 Marks)

OR

- 4 a. For the following circuit determine Z_i , Z_o , A_v , A_i $h_{re} = -0.99$, $h_{ib} = 14.3\Omega$. (08 Marks)

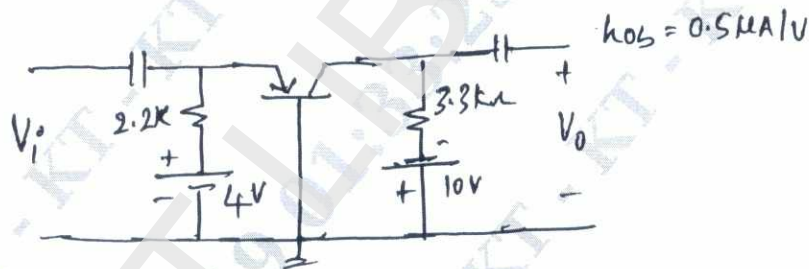


Fig.Q.4(a)

- b. What are the advantages of h-parameters? (06 Marks)
- c. Define h-parameters and obtain h-parameter equivalent circuit of CE configuration. (06 Marks)

Module-3

- 5 a. Obtain expression for voltage gain, current gain, input and output impedance of a Darlington Emitter follower circuit. Draw necessary equivalent circuit. (12 Marks)
- b. With a neat block diagram, obtain expression for Z_{if} and Z_{of} for voltage series feedback amplifier. (08 Marks)

OR

- 6 a. Explain the general characteristics of negative feedback amplifier. (08 Marks)
- b. Explain the need of cascading amplifier. A given amplifier arrangement has the following gains. $A_{v1} = 10$, $A_{v2} = 20$ and $A_{v3} = 40$. Calculate overall voltage gain and total voltage gain in dB. (06 Marks)
- c. With a simple block diagram, explain the concept of feedback amplifier. (06 Marks)

Module-4

- 7 a. With a neat circuit diagram, explain the operation of a class B push pull power amplifier and maximum conversion efficiency is 78.5%. (08 Marks)
- b. With a neat circuit diagram, explain the operation of RC-phase shift oscillator using BJT and write f_{osc} equation. (06 Marks)
- c. A series fed class A amplifier as shown in Fig.Q.7(c). Operates from a DC source and applied sinusoidal input signal generates peak base current 9mA. Calculate I_{CQ} , V_{CEQ} , P_{dc} , P_{ac} and efficiency. (06 Marks)

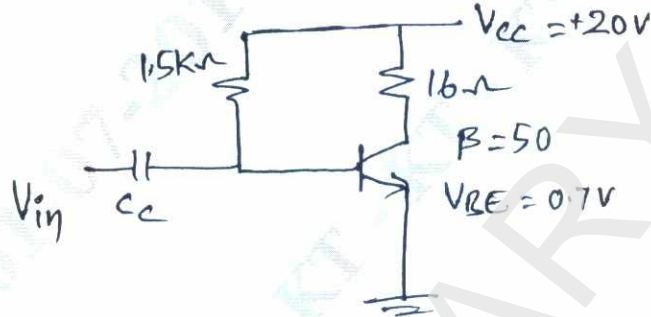


Fig.Q.7(c)

OR

- 8 a. The frequency selective circuit arms of wein bridge oscillator uses $C_1 = C_2 = 0.001\mu F$, $R_1 = 10K\Omega$ while R_2 is kept variable. The frequency is to be varied from 10Hz to 50kHz by varying R_2 . Find the range of R_2 . (06 Marks)
- b. With a neat circuit diagram, explain the operation of a transformer coupled class A power amplifier and prove that conversion efficiency is 50%. (08 Marks)
- c. With a neat circuit diagram, explain the working principle of crystal oscillator in series resonant mode. (06 Marks)

Module-5

- 9 a. Explain the operation of JFET amplifier using fixed bias. Draw the JFET small signal model and derive the expression for Z_i , Z_o and A_v . (06 Marks)
- b. Explain the construction, working and characteristics of n-channel enhancement type MOSFET. (08 Marks)
- c. Determine the following for network shown in Fig.Q.9(c) V_{GSQ} , V_{DS} , V_S , V_G , V_D . (06 Marks)

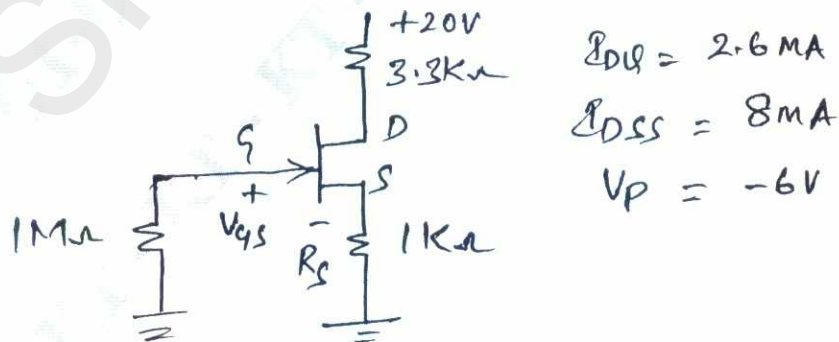


Fig.Q.9(c)

OR

- 10 a. Compare FET over BJT. (06 Marks)
- b. With neat diagrams, Explain the construction, working and characteristics of n-JFET's. (08 Marks)
- c. Design the fixed bias network as shown in Fig.Q.10(c) having an a.c. gain of 10. Determine the value of R_D . (06 Marks)

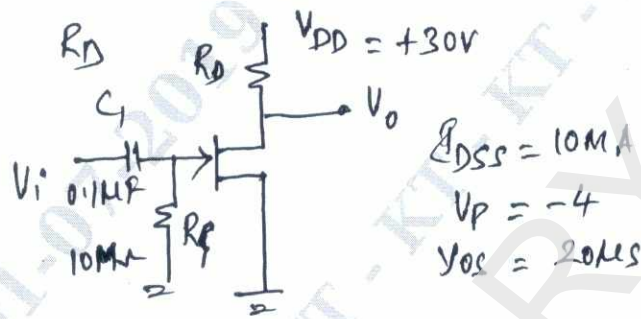


Fig.Q.10(c)

CBCS SCHEME

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17EE35

Third Semester B.E. Degree Examination, June/July 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. What is a K-map? Which is the code used to number K-map and why? Write a neat numbered 4-variable K-map. (06 Marks)
- b. Using K-map, evaluate the minimal POS expression of,
 $f(a, b, c, d) = \pi M(0, 2, 4, 6, 8) \cdot \pi D(1, 9, 12, 15)$ (08 Marks)
- c. Evaluate the minimal SOP expression using VEM with 'Z' as MEV.
 $f(w, x, y, z) = \sum m(0, 3, 5, 7, 8, 9, 10, 12, 13) + \sum d(1, 6, 11, 14)$ (06 Marks)

OR

- 2 a. What is don't care condition? What are its advantages? (04 Marks)
- b. Evaluate the canonical SOP expression and hence determine the minimal expression using K-map $F = \overline{ABD} + \overline{AB} + \overline{AC} + CD$. (08 Marks)
- c. Minimize the following SOP expression using Quine McCluskey method:
 $f(w, x, y, z) = \sum m(3, 7, 8, 10, 11, 12, 14, 15) + \sum d(2, 6)$ (08 Marks)

Module-2

- 3 a. With a neat diagram, explain the operation of a carry look-ahead adder circuit. (10 Marks)
- b. Implement the following Boolean function using a 4:1 MUX with a and b as select inputs.
 $f(a, b, c, d) = \sum m(4, 5, 7, 8, 10, 12, 15)$ (06 Marks)
- c. Implement a 2 to 4 decoder using 1 to 2 decoders. (04 Marks)

OR

- 4 a. Design a full adder using 4:1 MUX. (06 Marks)
- b. Implement a 1-bit comparator using a suitable decoder. (06 Marks)
- c. With a logic diagram, explain the operation of a decimal to BCD priority encoder. (08 Marks)

Module-3

- 5 a. Explain the operation of an SR latch with a circuit diagram and characteristic table. Justify its application as switch debouncer with a relevant circuit and waveforms. (08 Marks)
- b. Design a 4-bit shift register using DFFs. Design a twisted ring counter using a 4-bit shift register. (06 Marks)
- c. Design a mod-11 up ripple counter using TFF. (06 Marks)

OR

- 6 a. What is the problem in SRFF? How is it eliminated in JKFF? Explain with a neat diagram. (06 Marks)
- b. With a neat logic diagram, explain the different modes of operation of universal shift register. (07 Marks)
- c. Design a synchronous counter using JKFF with counting sequence 0, 2, 6, 1, 3, 7, 0.... (07 Marks)

- c. An edge triggered DFF is connected as shown in Fig.Q8(c). Assuming $Q = 0$ initially, sketch the output waveform and determine the frequency of the output signal.

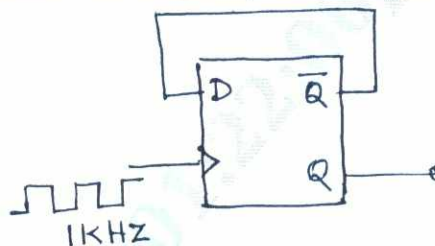


Fig.Q8(c)

(06 Marks)

Module-5

- 9 a. Explain entity and architecture with reference to VHDL code of full adder circuit. (08 Marks)
 b. Write VHDL code to implement 2:1 MUX. (06 Marks)
 c. List out all operators in VHDL with examples. (06 Marks)

OR

- 10 a. Explain various data types supported in VHDL with examples. (08 Marks)
 b. Implement a 1-bit comparator either using VHDL code or verilog. (04 Marks)
 c. Implement a JKFF with active low asynchronous inputs \overline{pr} and \overline{clr} along with clock input using verilog/VHDL. (08 Marks)

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17EE36

Third Semester B.E. Degree Examination, June/July 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. Define sensitivity of Wheatstone bridge and obtain expression for sensitivity S_B of wheatstone bridge. (08 Marks)
- b. A small resistance of approximately $50\mu\Omega$ is measured using Kelvin's double bridge. At balance, the value of the standard resistance is $100.05\mu\Omega$ resistances of the inner ratio arms are 100.51Ω and 200Ω respectively, resistances of outer ratio arms are 100.4Ω and 200Ω respectively. The resistance of the interlink is $800\mu\Omega$. Calculate the magnitude of error in measurement. (06 Marks)
- c. Explain with a neat sketch, construction and working principle of Megger. (06 Marks)

OR

- 2 a. Explain measurement of inductance by Anderson's bridge with neat diagram. (08 Marks)
- b. A a.c. bridge is balanced at 2kHz with following components in each arm. Arm AB = $10K\Omega$, Arm BC = $100\mu f$ in series with $100K\Omega$, Arm AD = $50K\Omega$. Find the unknown impedance $R + jX$ in the arm DC, if the detector is between BD. (06 Marks)
- c. Explain sources and detectors in a.c. bridges. (06 Marks)

Module-2

- 3 a. Explain the types of errors and how to minimize errors in wattmeters. (06 Marks)
- b. Explain with neat sketch calibration of single phase energy meter. (08 Marks)
- c. A wattmeter has a current coil of 0.03Ω resistance and a pressure coil of 6000Ω resistance. Calculate % error if the wattmeter is so connected that
 - i) Current coil is on load side
 - ii) The pressure coil is on load side(a) If the load takes 20A at voltage of 220V and 0.6 p.f in each case
(b) What load current would give equal errors with the two connections? (06 Marks)

OR

- 4 a. With a neat sketch, explain the construction and working of II-phase electrodynamicometer power factor meter. (08 Marks)
- b. With the neat sketch, explain the operation of western frequency meter. (06 Marks)
- c. The number of revolutions/kwh of a 230V, 10A Watt-hour meter is 900. On a test at half load, the time taken for 20 revolution of the disc is found to be 69 secs. Determine the meter error at half load. (06 Marks)

Module-3

- 5 a. With the help of neat sketch and phasor diagram, obtain the expression for transformation ratio (R) and phase angle (θ) of current transformer. (10 Marks)
- b. Explain Silbee's method of testing current transformer. (06 Marks)
- c. Write note on shunts and multipliers. (04 Marks)

OR

- 6 a. Explain the method of measurement of magnetizing force with a neat diagram. (08 Marks)
 b. A particular bar type current transformer has 300 secondary turns. The secondary winding carries a burden of ammeter having resistance 1Ω and inductive reactance of 0.53Ω . While the secondary resistance and reactance are 0.25 , 0.35Ω . The magnetizing m.m.f. required is $85A$ while the current component for core losses is $50A$. Find: i) The primary current when secondary current is $5A$, ii) The ratio error, iii) The reduction in the number of turns of secondary to obtain zero ratio error. (12 Marks)

Module-4

- 7 a. With the help of neat sketch, explain the working of true RMS voltmeter. (08 Marks)
 b. Explain the working of electronic multimeter. (06 Marks)
 c. Explain the working principle of electronic energy meter. (06 Marks)

OR

- 8 a. With a block diagram, explain the
 i) Ramp-type digital voltmeter (10 Marks)
 ii) Integrating type digital voltmeter. (04 Marks)
 b. What are the advantages of electronic instruments?
 c. A coil with a resistance of 12Ω is connected across the test terminals of Q-meter circuit and resonance occurs when the frequency of the oscillator is $1000kHz$ and the capacitance of the resonating capacitor is $75pf$. Calculate % error introduced in calculated value of Q due to an insertion resistance of 0.02Ω across the oscillator. (06 Marks)

Module-5

- 9 a. Explain the following: i) Light emitting display ii) Liquid crystal display. (08 Marks)
 b. Explain with neat sketch, cathode ray tube. (06 Marks)
 c. Write short notes on: i) Dot-matrix display ii) Bar-matrix display. (06 Marks)

OR

- 10 a. Explain with neat sketch electro-cardio-graph [ECG]. (08 Marks)
 b. Explain strip-chart recorders. (06 Marks)
 c. Explain x-y recorders. (06 Marks)

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17MATDIP31

Third Semester B.E. Degree Examination, June/July 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. Find the sine of the angle between $\vec{a} = 2\hat{i} - 2\hat{j} + \hat{k}$ and $\vec{b} = \hat{i} - 2\hat{j} + 2\hat{k}$. (08 Marks)
- b. Express the complex number $\frac{(1+i)(1+3i)}{1+5i}$ in the form $a + ib$. (06 Marks)
- c. Find the modulus and amplitude of $\frac{(1+i)^2}{3+i}$. (06 Marks)

OR

- 2 a. Show that $(1 + \cos\theta + i \sin\theta)^n + (1 + \cos\theta - i \sin\theta)^n = 2^{n+1} \cdot \cos^n\left(\frac{\theta}{2}\right) \cdot \cos\left(\frac{n\theta}{2}\right)$. (08 Marks)
- b. If $\vec{a} = 2\hat{i} + 3\hat{j} - 4\hat{k}$ and $\vec{b} = 8\hat{i} - 4\hat{j} + \hat{k}$, then prove that \vec{a} is perpendicular to \vec{b} . Also find $|\vec{a} \times \vec{b}|$. (06 Marks)
- c. Determine λ such that $\vec{a} = \hat{i} + \hat{j} + \hat{k}$, $\vec{b} = 2\hat{i} - 4\hat{k}$ and $\vec{c} = \hat{i} + \lambda\hat{j} + 3\hat{k}$ are coplanar. (06 Marks)

Module-2

- 3 a. If $y = \cos(m \log x)$ then prove that $x^2 y_{n+2} + (2n+1)xy_{n+1} + (m^2 + n^2)y_n = 0$. (08 Marks)
- b. Find the angle of intersection of the curves $r^2 \sin 2\theta = a^2$ and $r^2 \cos 2\theta = b^2$. (06 Marks)
- c. Find the pedal equation of the curve $r = a(1 + \sin\theta)$. (06 Marks)

OR

- 4 a. Obtain the Maclaurin's series expansion of $\log \sec x$ up to the terms containing x^6 . (08 Marks)
- b. If $u = \operatorname{cosec}^{-1}\left(\frac{x^{\frac{1}{2}} + y^{\frac{1}{2}}}{x^{\frac{1}{3}} + y^{\frac{1}{3}}}\right)$, prove that $xu_x + yu_y = -\frac{1}{6} \tan u$. (06 Marks)
- c. Find $\frac{\partial(u, v, w)}{\partial(x, y, z)}$ where $u = x + y + z$, $v = y + z$, $w = z$. (06 Marks)

Module-3

- 5 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 $\int_0^1 \int_x^{\sqrt{x}} xy dy dx$ (06 Marks)

OR

- 6 a. Evaluate $\int_0^a \int_0^x \int_0^{x+y} e^{x+y+z} dz dy dx$. (08 Marks)
- b. Evaluate $\int_0^{\infty} \frac{x^6}{(1+x^2)^{9/2}} dx$. (06 Marks)
- c. Evaluate $\iint_A xy dx dy$ where A is the area bounded by the circle $x^2 + y^2 = a^2$ in the first quadrant. (06 Marks)

Module-4

- 7 a. A particle moves along the curve $\vec{r} = \cos 2t \hat{i} + \sin 2t \hat{j} + t \hat{k}$. Find the components of velocity and acceleration at $t = \frac{\pi}{8}$ along $\sqrt{2} \hat{i} + \sqrt{2} \hat{j} + \hat{k}$. (08 Marks)
- b. Find divergence and curl of the vector $\vec{F} = (xyz + y^2z) \hat{i} + (3x^2 + y^2z) \hat{j} + (xz^2 - y^2z) \hat{k}$. (06 Marks)
- c. Find the directional derivative of $\phi = x^2yz^3$ at (1, 1, 1) in the direction of $\hat{i} + \hat{j} + 2\hat{k}$. (06 Marks)

OR

- 8 a. Find the angle between the tangents to the curve $x = t^2, y = t^3, z = t^4$ at $t = 2$ and $t = 3$. (08 Marks)
- b. Find $\text{curl}(\text{curl } \vec{A})$ where $\vec{A} = xy \hat{i} + y^2z \hat{j} + z^2y \hat{k}$. (06 Marks)
- c. Find the constants a, b, c such that the vector field $(\sin y + az) \hat{i} + (bx \cos y + z) \hat{j} + (x + cy) \hat{k}$ is irrotational. (06 Marks)

Module-5

- 9 a. Solve $\frac{dy}{dx} = \frac{y}{x} + \sin\left(\frac{y}{x}\right)$. (08 Marks)
- b. Solve $\frac{dy}{dx} + y \cot x = \sin x$. (06 Marks)
- c. Solve $\frac{dy}{dx} + \frac{y}{x} = y^2 x$. (06 Marks)

OR

- 10 a. Solve $x^2 y dx - (x^3 + y^3) dy = 0$. (08 Marks)
- b. Solve $x^2 \frac{dy}{dx} = 3x^2 - 2xy + 1$. (06 Marks)
- c. Solve $\left[y \left(1 + \frac{1}{x} \right) + \cos y \right] dx + [x + \log x - x \sin y] dy = 0$. (06 Marks)

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Third/Fourth Semester B.E. Degree Examination, June/July 2019
Constitution of India, Professional Ethics & Human Rights
(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, using whiteners** on the **OMR** sheets are strictly prohibited.

-
1. The members of the Constituent Assembly which drafted the constitution of India were,
 - a) Nominated by the British parliament
 - b) Nominated by the Governor General
 - c) Elected by the Legislative Assemblies of various provinces
 - d) Elected by the Indian National Congress and Muslim league.
 2. Which one of the following determines that the Indian constitution is federal?
 - a) A written and rigid constitution
 - b) An independent judiciary
 - c) Vesting of residuary powers with the centre
 - d) Distribution of powers between the centre and the state.
 3. The Indian parliamentary system is different from the British parliamentary system in which of the following respects?
 - a) Both a real and a nominal executive
 - b) A system of collective responsibility
 - c) Bicameral legislature
 - d) A different judicial review
 4. Which one of the following objectives is not embodied in the Preamble to the Constitution of India?
 - a) Liberty of thought
 - b) Economic liberty
 - c) Liberty of expression
 - d) Liberty of belief

5. The mind of the makers of the Constitution of India is reflected in which of the following?
 a) The Preamble
 b) The Fundamental Rights
 c) The Directive Principles of State policy
 d) The fundamental duties.
6. Which one of the following rights was described by Dr. B.R. Ambedkar as the heart and soul of the Constitution?
 a) Right to freedom of religion
 b) Right to property
 c) Right to equality
 d) Right to constitutional remedies.
7. The 9th schedule to the Indian Constitution was added by;
 a) 1st Amendment
 b) 8th Amendment
 c) 9th Amendment
 d) 42nd Amendment
8. Which one of the following Articles of the directive principles of state policy deals with the promotion of international peace and security?
 a) 51
 b) 48A
 c) 43A
 d) 41
9. The ideal of 'Welfare state' in the Indian Constitution is enshrined in its ;
 a) Preamble
 b) Directive Principles of State Policy
 c) Fundamental rights
 d) 7th Schedule
10. For a citizen of India, the duty to pay taxes is a ;
 a) Fundamental duty
 b) Legal obligation
 c) Constitutional obligation
 d) Moral obligation
11. Which of the following statements regarding the pardoning Powers of the President is incorrect?
 a) Pardoning power of the president is restricted.
 b) President can completely pardon any sentence
 c) The power to pardon is the discretionary power of President
 d) None of these.
12. Which one of the following is responsible for the preparation and presentation of union budget of the parliament?
 a) Department of Revenue
 b) Department of Economic Affairs
 c) Department of Expenditure
 d) None of these
13. Which of the following statement is incorrect regarding budget?
 a) The term 'Budget' is not explicitly stated in Indian Constitution
 b) The Budget can be introduced in Lok Sabha only
 c) The introduction of budget required recommendation of the President
 d) The Budget is passed like an ordinary bill in the parliament.

14. The power of the Supreme Court of India to decide disputes between the Centre and the States falls under its;
- a) Advisory jurisdiction
 - b) Appellate jurisdiction
 - c) Original jurisdiction
 - d) Constitutional jurisdiction
15. The power to increase the number of judges in the Supreme Court of India is vested in;
- a) The President of India
 - b) The Parliament
 - c) The Chief Justice of India
 - d) The Law Commission.
16. There is a Parliamentary System of Government in India because the
- a) Lok Sabha is elected directly by the people
 - b) Parliament can amend the Constitution
 - c) Rajya Sabha cannot be dissolved
 - d) Council of Ministers is responsible to the Lok Sabha
17. Appointment, posting and promotion of district judge in a state are made by the
- a) Governor in consultation with the High Court
 - b) Chief Justice of the High Court of that state in consultation with the Governor
 - c) President in consultation with the High Court
 - d) President in consultation with the Governor and the High Court.
18. Notifications in respect of by-elections to the Lok Sabha are issued by the
- a) Election commission
 - b) Speaker of Lok Sabha
 - c) The Whip
 - d) No notification is required for by-election.
19. With reference to 'None of the Above (NOTA)' option on electronic voting machines and ballot papers, consider the following statements :
- I) The Citizens of India have the right to negative vote by exercising the 'None of the Above' option in EVMs and ballot papers.
 - II) If NOTA gets the highest votes in an election, then the election is conducted again.
- a) I only
 - b) I and II
 - c) II only
 - d) None of these
20. With reference to 73rd Amendment Act of the constitution, a Grama Sabha is a body consisting of
- a) All the adult population of the Village under the Panchayat
 - b) The whole population of the villages under the Panchayat other than children less than five years of age.
 - c) The registered voters of the villages under the Panchayat
 - d) None of the above.
21. Which of the following is not taken as the aim of engineering ethics?
- a) Moral imagination
 - b) Recognition of ethical issues
 - c) Sense of responsibility
 - d) Shifting of responsibility
22. Which of the following is not a concept of responsibility?
- a) Minimalist
 - b) Maximalist
 - c) Reasonable care
 - d) Good works

23. Corrupt Professional Judgment leads to
a) Integrity in R&D
b) Reliability
c) Conflict of interest
d) None of these
24. The formulate of a soft drink is an example of
a) Copy Right
b) Trade Secret
c) Patent
d) Trade Marks
25. It is not a kind of trademark:
a) Designs
b) Sounds
c) Symbols
d) Good will
26. These are not trade secrets
a) Formulas
b) Principles
c) Devices
d) None of these
27. Stealing of intellectual property means
a) Cooking
b) Forging
c) Plagiarism
d) Symbols
28. Cooking means
a) Boiling under pressure
b) Making deceptive statements
c) Retaining results with fit the theory
d) Misleading the public about the quality of a product.
29. This is not dishonesty in engineering
a) Forging
b) Blending
c) Trimming
d) Cooking
30. One of the ways of reducing the risk is
a) Complex interaction
b) Tight coupling
c) Normalization of deviance
d) Changing the working system.

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17KKM39/49

Question Paper Version : D

Third/Fourth Semester B.E. Degree Examination, June/July 2019

ಕನ್ನಡ ಮನಸು

(COMMON TO ALL BRANCHES)

Time: 2 hrs.]

[Max. Marks: 30

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ 30 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 ಕಷ್ಟ ಅಥವಾ ನೀಲಿ ಶಾಹಿಯ ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಗುರುತು ಮಾಡಬೇಕು.

1. ವಿಶ್ವಾಮಿತ್ರ ತ್ರಿಶಂಕುವಿಗಾಗಿ ಇದನ್ನು ನಿರ್ಮಿಸಿದನೆಂದು ಗೊರೂರರು ಹೇಳಿದ್ದಾರೆ.
ಅ) ಪಾಕಿಸ್ತಾನ ಬ) ಎಮ್ಮೆ ಕ) ಈಚಲು ಮರ ಡ) ತ್ರಿಶಂಕು ಸ್ವರ್ಗ.
2. "ಮಹಿಷ ಮಂಡಲ" ಎಂದರೆ
ಅ) ಆಂಧ್ರ ಪ್ರದೇಶ ಬ) ನಭೋಮಂಡಲ ಕ) ಮೈಸೂರು ಡ) ಚಿತ್ರದುರ್ಗ.
3. ಬಿ.ಜಿ. ಎಲ್ ಸ್ವಾಮಿಯವರಿಗೆ ಕೇಂದ್ರ ಸಾಹಿತ್ಯ ಅಕಾಡೆಮಿ ಪ್ರಶಸ್ತಿ ತಂದುಕೊಟ್ಟ ಕೃತಿ
ಅ) ಕಾಲೇಜು ರಂಗ ಬ) ಹಸಿರು ಹೊನ್ನು ಕ) ನಾಕುತಂತಿ ಡ) ಅದಿರಂಗ ಪುರಾಣ.

4. ಅಗೋ ಚೆಲುವಿನ ರಾಣಿ ಬಂದಳು ಹೀಗೆ ಕೂಗಿದ ಬೆಡ್
ಅ) ನಾಲ್ಕನೇ ಬ) ಐದನೇ ಕ) ಆರನೇ ಡ) ಏಳನೇ.
5. ಗೂರೂರರ ಪ್ರಕಾರ ಕಲಿಯುಗದಲ್ಲಿ ಬೇಕಾಗಿರುವ ಗುಣ
ಅ) ಕೆಂಪುಗುಣ ಬ) ಸಾತ್ವಿಕ ಗುಣ ಕ) ತಾಮಸ ಗುಣ ಡ) ರಾಜಸಗುಣ.
6. ನೇಣುಗಂಬವ ಕೂಡ ದಿಕ್ಕರಿಸಿ ನುಗ್ಗುವರು - ಇದು ಯಾವ ಕವನದ ಸಾಲು
ಅ) ರೋಟಿ ಮತ್ತು ಕೋವಿ ಬ) ಶ್ರಾವಣ ಕ) ಬೆಲ್ವಿಯ ಹಾಡು ಡ) ಬೇಂದ್ರೆ ಕವನ.
7. ಕಜ್ಜ - ಇದರ ತತ್ವಮ ರೂಪ
ಅ) ಕಾಯ ಬ) ಕಾವ್ಯ ಕ) ಕರ್ತೃ ಡ) ಕಾರ್ಯ.
8. ಕತ್ತಿಮನೆ - ಇದು
ಅ) ಜೋಡಿಪದ ಬ) ಸಂಬಂಧಿತ ಪದಗುಂಪು ಕ) ನುಡಿಗಟ್ಟು ಡ) ದ್ವಿರುಕ್ತಿ ಪದ.
9. "ಅಟ್ಟಕ್ಕೇರಿಸು" - ಈ ನುಡಿಗಟ್ಟಿನ ವಿಶೇಷಾರ್ಥ
ಅ) ಮೇಲೆಹತ್ತು ಬ) ಹೊಗಳು ಕ) ಅಟ್ಟಕ್ಕೇ ಹೇರಲು ಸಹಕರಿಸು ಡ) ಮೇಲಕ್ಕೇ ಹತ್ತಿಸಬೇಕು.
10. ನೋಡಿದಳು - ಇದರ ನೆಷೇದಾರ್ಥ
ಅ) ನೋಡಳು ಬ) ನೋಡುತ್ತಿದ್ದಳು ಕ) ನೋಡಿದ್ದಳು ಡ) ನೋಡುತ್ತಾಳೆ.
11. ಕಲಿಭೀಮನೆ - ಇದರ ವಿಭಕ್ತಿ
ಅ) ಚತುರ್ಥಿ ಬ) ದ್ವಿತೀಯಾ ಕ) ಸಂಭೋಧಾನಾ ಡ) ಸಪ್ತಮಿ .
12. ಮೂಡಣ - ವಿರುದ್ಧ ಪದ
ಅ) ಪಡುವಣ ಬ) ತೆಂಕಣ ಕ) ಬಡಗಣ ಡ) ಮೂಡಣ

13. ದ.ರಾ.ಬೇಂದ್ರೆಯವರ ಕಾವ್ಯನಾಮ
ಅ) ಅಂಬಿಕಾತನಯ ದತ್ತ ಬ) ವಿನಾಯಕ ಕ) ಆನಂದಕಂದ ಡ) ಕಡತೀರದ ಭಾರ್ಗವ
14. ಹೊಳೆಗೆ ಮತ್ತು ಮಳಿಗೆ ಆಗ್ಯದ ಲಗ್ನ ಇದು ಯಾವ ಕವನದ ಸಾಲು
ಅ) ರೋಷಿ ಮತ್ತು ಕೋವಿ ಬ) ಬೆಲ್ವಿಯ ಹಾಡು ಕ) ಶ್ರಾವಣ ಡ) ಎಲ್ಲಾ ಹುಡುಗಿಯರ ಕನಸು
15. ಭಗವಂತ ಮಾನವರಿಗೆ ಕಾಣಿಸಿಕೊಂಡರೆ ಮೊದಲು ಅನ್ನದ ರೂಪದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳಬೇಕು ಎಂದು ಹೇಳಿದವರು.
ಅ) ವಿಶ್ವೇಶ್ವರಯ್ಯ ಬ) ಕುವೆಂಪು ಕ) ಲಾ.ಬ. ಶಾಸ್ತ್ರಿ ಡ) ಗಾಂಧೀಜಿ
16. ಹಿಂದುಳಿದ ವರ್ಗಗಳಿಗೆ ಸರಕಾರಿ ಕೆಲಸಗಳಲ್ಲಿ ಮೀಸಲಾತಿ ನೀಡಲು ನಾಲ್ವಡಿ ಕೃಷ್ಣರಾಜ ಒಡೆಯರು ರಚಿಸಿದ ಆಯೋಗ
ಅ) ಹಾವನೂರು ಆಯೋಗ ಬ) ವೆಂಕಟಸ್ವಾಮಿ ಆಯೋಗ
ಕ) ನಾಲ್ವಡಿ ಆಯೋಗ ಡ) ಮಿಲ್ಲರ್ ಆಯೋಗ
17. ಶಿವರಾಮ ಕಾರಂತರಿಗೆ ಜ್ಞಾನಪೀಠ ಪ್ರಶಸ್ತಿ ತಂದುಕೊಟ್ಟ ಕೃತಿ
ಅ) ಚೋಮನ ದುಡಿ ಬ) ಮರಳಿ ಮಣ್ಣಿಗೆ
ಕ) ಮೂಕಜ್ಜಿಯ ಕನಸುಗಳು ಡ) ಹುಚ್ಚ ಮನಸಿನ ಹತ್ತು ಮುಖಗಳು
18. ಕುವೆಂಪುರವರು ಅಣ್ಣಪ್ಪನನ್ನು ಹೀಗೆಂದಿದ್ದಾರೆ
ಅ) ಹಾಸ್ಯಗಾರ ಜ) ನಗೆಗಾರ ಕ) ಗೇಣಿದಾರ ಡ) ಕೂಲಿಕಾರ
19. ಪಿ. ಲಂಕೇಶರ ಈ ಕೃತಿಗೆ ಕೇಂದ್ರ ಸಾಹಿತ್ಯ ಅಕಾಡೆಮಿ ಪ್ರಶಸ್ತಿ ಬಂದಿದೆ.
ಅ) ಗುಣಮುಖ ಬ) ಸಂಕ್ರಾಂತಿ ಕ) ಕಲ್ಲು ಕರಗುವ ಸಮಯ ಡ) ಹುಳಿನೆನಪು.
20. ಎಲ್ಲಾರಂಥವನಲ್ಲ ನನ್ನಗಂಡ - ಎಂದು ಹಾಡಿದ ಸಂತ
ಅ) ಅಕ್ಕಮಹಾದೇವಿ ಬ) ಶಿಶುನಾಳ ಶರೀಫ ಕ) ಬಸವಣ್ಣ ಡ) ಸರ್ವಜ್ಞ.

21. ಪರಿಸರದ ಕತೆಯ ಲೇಖಕರು
ಅ) ಬಿ.ಜಿ. ಎಲ್ ಸ್ವಾಮಿ ಬ) ಕುವೆಂಪು ಬೇಂದ್ರೆ ಕ) ಬೇಂದ್ರೆ ಡ) ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
22. "ಗಾಂಧಿ" ಕಥೆಗಾರ
ಅ) ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ ಬ) ಪಿ. ಲಂಕೇಶ ಕ) ಯೂ. ಆರ್. ಆನಮತಮೂರ್ತಿ ಡ) ಕುವೆಂಪು
23. ಸಾವಿರಾರು ನದಿಗಳು ಕವನ ಸಂಕಲದ ಕವಿ
ಅ) ಸು. ರಂ. ಎಕ್ಕುಂಡಿ ಔ) ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್ ಕ) ಸಿದ್ದಲಿಂಗಯ್ಯ ಡ) ಬೇಂದ್ರೆ.
24. ವಿಶ್ವಾಮಿತ್ರನನ್ನು ಗೊರೂರು ಹೀಗೆಂದು ಕರೆದಿದ್ದಾರೆ.
ಅ) ಕ್ರಾಂತಿಕಾರ ಬ) ಸೃಷ್ಟಿಕಾರ ಕ) ಸಮಗಾರ ಡ) ಯವೂದೂ ಅಲ್ಲ.
25. "ನೀರು" ಕಥೆ ಈ ನದಿ ವಿವಾದದ ಬಗ್ಗೆ ಅರಿವೂ ಮಾಡಿಸುತ್ತದೆ.
ಅ) ಮಹಾದಾಯಿ ಬ) ಭೀಮ ಕ) ಕಾವೇರಿ ಡ) ನೇತ್ರಾವತಿ.
26. ಮೈಸೂರು ರಾಜ್ಯಕ್ಕೆ ಕರ್ನಾಟಕ ಎಂದು ನಾಮಕರಣ ಮಾಡಿದ ವರ್ಷ
ಅ) 1956 ಬ) 1971 ಕ) 1975 ಡ) 1973.
27. ಮೆಲ್ಲಮೆಲ್ಲನೆ - ಇದು
ಅ) ದ್ವಿರುಕ್ತಿ ಬ) ಜೋಡುನುಡಿ ಕ) ಅನುಕರಣ ಅವ್ಯಯ ಡ) ಯಾವುದೂ ಅಲ್ಲ
28. "ಮಕ್ಕಳು ಮರಿ" - ಇದು
ಅ) ದ್ವಿರುಕ್ತಿ ಬ) ಪ್ರತ್ಯಯ ರೂಪ ಕ) ಜೋಡುನುಡಿ ಡ) ಅನುಕರಣ ಪದ
29. ಗಳಗಳನೆ - ಇದು
ಅ) ಅನುಕರಣ ಅವ್ಯಯ ಬ) ದ್ವಿರುಕ್ತಿ ಕ) ಜೋಡುನುಡೆ ಪದ ಡ) ಸಂಭಾಂಧ ವಾಚದ ಪದ
30. ಆಕಾಶ - ಇದರ ತತ್ವವ ರೂಪ
ಅ) ಆಗಸ ಬ) ಅಗಸ ಕ) ಆಕಾಶ ಡ) ಆಗಾಸ.

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Question Paper Version : A

Third/Fourth Semester B.E. Degree Examination, June/July 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 is strictly prohibited.

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

1. Country: _____
a) Desha b) Vesha c) Rajya d) Taluk
2. Girl: _____
a) Huduga b) Ganda c) Hudugi d) Badagi
3. Mother: _____
a) Tande b) Tayi c) Magalu d) Hendati
4. Circular: _____
a) Chowka b) Aayatha c) Vrittakara d) Udda
5. Gold: _____
a) Chinna b) Belli c) Vajra d) Havala

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

6. Doctor Aushadi _____ (kodu)
a) Heltare b) Kottaru c) Sigtare d) Kelu
7. Leela ivattu bengalurige _____ (Hogu)
a) Hoguttane b) Hoguttale c) ide d) Howdu
8. TV _____ tale novu baruttade. (Nodu)
a) Odidare b) Kelidre c) Nodidre d) Idre

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

9. Vayasu: _____
a) Year b) Month c) Week d) Age
10. Tarakari: _____
a) Fresh b) Lemon c) Vegetable d) Potato
11. Gottu: _____
a) Know b) Like c) Dark d) Cold
12. Adigemane: _____
a) Bath room b) Kitchen c) Street d) Hall

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

13. Neevu Hege _____ ?
a) Iddare b) Iddiri c) Iddale d) Iddi

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

14. Aa Pustaka olleyadu.
a) Which book is good? b) That book is good.
c) My book is good. d) Her book is bad.

15. Naanu beligge Edde.
 a) I got up late. b) I got up in the morning.
 c) I like sleeping. d) He woke up late.

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

16. Curd: _____
 a) Majjige b) Anna c) Sambar d) Mosaru
17. Grass: _____
 a) Hullu b) Hallu c) Bellu d) Mullu
18. To laugh: _____
 a) Hogu b) Nagu c) Bidu d) Magu
19. Hot water: _____
 a) Tanneru b) Bella c) Bisi neeru d) Hasiru
20. Lesson: _____
 a) Paata b) Nota c) Parisara d) Jagala

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

21. Maralu: _____
 a) Land b) Sand c) People d) Bank
22. Samparka: _____
 a) Run b) Father c) Contact d) Doubt
23. Hatti: _____
 a) Cotton b) Bread c) Jar d) King
24. Parisara: _____
 a) Daily b) Class c) Duty d) Environment

25. Tota: _____
a) Tall b) Strong c) Garden d) Like
26. Jwara: _____
a) Meal b) Fever c) Gruel d) Month
27. Raita: _____
a) Thieves b) Grass c) Farmer d) Field
28. Kaanu: _____
a) To see b) To ask c) To keep d) To play
29. Roodhi: _____
a) Teeth b) Practise c) Hot water d) Learn
30. Paata: _____
a) Tour b) Lesson c) Poor d) Happy

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