Code No. 65

FACULTY OF ENGINEERING

B.E. 2/4 (Civil) II – Semester (Suppl.) Examination, December 2017

Subject: Electrical Technology (Part – A)

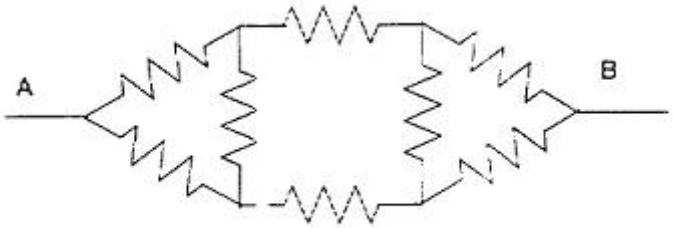
Time: 1½ Hours **Max.Marks: 38**

Note: Answer all questions from Part A and any three questions from Part B.

PART – A

1 Explain 'resistance', 'reactance' and 'impedance'. 2

2 Find the resistance between the terminals A and B for the network shown below. 2



Each resistance has 10 ohms of resistance

3 Mention the difference between core and shell type transformers. 3

4 Draw the vector diagram for a load transformer when load is inductive. 2

5 The frequency of the rotor current in a 3 phase 50 Hz, 4 pole induction motor at full load speed is about
a) 50 Hz b) 20 Hz c) 2 Hz d) Zero Hz 2

6 Define luminous efficiency, coefficient of utilization, space to height ratio. 3

PART – B

7 a) Obtain the relations for power in a balanced three phase delta system. 4

b) Calculate the r.m.s. value, the form factor and peak factor of a periodic voltage having the following values for equal time intervals changing suddenly from one value to the next: 0, 5, 10, 20, 50, 60, 50, 20, 10, 5, 0, -5, -10 V etc. What would be the r.m.s. value of sine wave having the same peak value. 4

8 a) Draw and explain the no load phasor diagram of a single phase transformer. 4

b) A 100 kVA, 6.6 kV/415 V, single phase transformer has an effective impedance of (3+8j) ohms referred to HV side. Estimate the full load voltage regulation at 0.8 pf lagging and 0.8 leading pf. 4

9 a) With necessary diagrams explain in detail about polar curves. 4

b) The power supplied to a three-phase induction motor is 32 kW and the stator losses are 1200 W. If the slip is 5 percent, determine (a) the rotor copper loss, (b) the total mechanical power developed by the rotor, (c) the output power of the motor if friction and windage losses are 750 W, and (d) the efficiency of the motor, neglecting rotor iron loss. 4

10 a) Prove that average power consumption in pure capacitor is zero when a.c. voltage is applied. 4

b) A balanced, three-wire, star-connected, 3-phase load has a phase voltage of 240 V, a line current of 5A and a lagging power factor of 0.966. Draw the complete phasor diagram. 4

11 a) Derive e.m.f. equation of a single phase transformer. 4

b) Discuss in detail about Auto transformer starting method of starting of three phase induction motor. 4

****

Code No. 66

FACULTY OF ENGINEERING

B.E. 2/4 (Civil) II – Semester (Suppl. Examination, December 2017

Subject: Mechanical Technology (Part – B)

Time: 1½ Hours **Max.Marks: 37**

Note: Answer all questions from Part A and any three questions from Part B.

PART – A

1	What are Paving breaker, pneumatic jack hammer and rock drill.	3
2	Differentiate earth moving and excavating equipments.	3
3	Differentiate between screw conveyor and belt conveyor.	2
4	Define Gyrating crusher.	2
5	Where paving breaker is used?	3

PART – B

6	a)	Explain Shovels and Drag lines.	4
	b)	Differentiate Bulldozers and Earth compactors.	4
7	a)	List different applications of Screw conveyor and Apron conveyor.	4
	b)	List out the advantages and disadvantages of Hoist winch and differential and Worm geared chain hoists.	4
8	a)	With a neat sketch, bring out the applications of Construction elevator and Bucket elevator.	5
	b)	Briefly bring out the uses of Whirler.	3
9	a)	With a neat sketch, describe shaking and vibrating screens and their applications.	5
	b)	How Concrete pumps are different from any other conventional pumps?	3
10		Explain Multistage reciprocating air compressor with a neat sketch.	8

****

Code No.72

FACULTY OF ENGINEERING

B.E. 2/4 (EEE) II – Semester (Suppl) Examination, December 2017

Subject: Electrical Machines - I

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1	Explain the principles of electromechanical energy conversion.		(3)
2	Give the basic concept of magnetically induced emf.		(2)
3	What do you understand by commutation in a DC machine.		(2)
4	Write the various applications of DC compound motor.		(2)
5	Mention the various methods of speed control of a DC series motor.		(3)
6	What are the advantages and disadvantages of Swinburne's test.		(3)
7	What is meant by ideal transformer?		(3)
8	Define voltage regulation of a single phase transformer.		(2)
9	Define armature reaction in dc generators.		(3)
10	List various losses in a single phase transformer.		(2)

PART – B (10 X 5 = 50 Marks)

11	a)	For a single excited magnetic system, establish relationship between magnetic Field energy and co energy.	(6)
	b)	Draw general representation of electromechanical conversion device.	(4)
12	a)	Describe with relevant diagrams, the different methods of excitation of DC Machines.	(5)
	b)	Explain the commutation process in DC machines with help of neat diagrams.	(5)
13	a)	Explain about the parallel operation of dc generator.	(5)
	b)	A 4-pole dc shunt generator with lap armature connected supplies a load of 100A at 200V. The armature resistance is 0.1 ohm and the shunt field resistance is 80 ohms Find (i) total armature current (ii) current per armature path and (iii) emf generated.	(5)

14 a) Derive the torgue equation of dc motor. (5)

b) A 4-pole series motor has 944 wave connected armature conductors. At a certain load the flux/ pole in 34.6 m Wb and the total mechanical torque. developed in 209 Nm. Calculate the line current taken by the motor and the speed of which it will run with an applied voltage of 500V. Total armature resistance is 3 ohms. (5)

15 a) List applications of dc shunt, dc series and dc compound motors. (5)

b) Explain the methods of speed control of dc shunt motors. (5)

16 a) Derived efficiency equation of dc motor. (5)

b) Describe the Hopkinson's test for obtaining the efficiency of two similar shunt motors. (5)

17 a) Explain the polarity test conducted on a single phase transformer with neat diagrams. (5)

b) A 200 KVA single phase transformer is in circuit continuously. For 8 hours in a day, the load in 160 kw at 0.8 pf. For 6 hours, the load is 80 kw at unity p.f and for the remaining period of 24 hours it runs on no load. Full load copper losses are 3.02KW and Iron losses are 1.6 KW. Find all day efficiency. (5)

***

Code No. 73

FACULTY OF ENGINEERING

BE 2/4 (Inst.) II – Semester (Suppl.) Examination, December 2017

Subject: Electrical Machines

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1 Draw the circuit diagram of (i) Series generator (ii) Compound motor (2M)

2 What are the effects of armature reaction in D.C generator? (2M)

3 An 8 pole wave connected D.C generator has 1000 armature conductor and flux per pole of 0.035 wb.At what speed must it be driven to generate 500V (3M)

4 Why does a transformer have higher efficiency than an Induction motor (2M)

5 Draw power flow diagram of an Induction motor (3M)

6 What are the speed control methods in D.C motors? (3M)

7 Give constructional details of a salient pole synchronous machine. (3M)

8 What is transformer ratio in a transformer? (2M)

9 What are the different types of stepper motor? (3M)

10 Why it is necessary to improve power factor. (2M)

PART – B

11 a) Draw and explain the load characteristics of D.C shunt generator. (4M)

b) A D.C shunt motor runs at 900rpm, on a 220V supply. Its armature resistance is 0.6Ω and the armature current taken is 40A. What resistance must be placed in series with armature in order to reduce the speed to 500rpm. The armature current remains the same. (6M)

12 a) Explain how the efficiency of a transformer may be found from O.C and S.C tests. (4M)

b) A 100KVA, 2.2KV/220V, 50Hz transformer has an iron loss of 900W and full load copper loss of 1000W. Determine the efficiency at full load 0.8 p.f lag and also the load at which maximum efficiency occur. (6M)

13 a) Explain the synchronous impedance method to find regulation of an alternator. (5M)

b) A 3 phase, 4 pole star connected alternator has smooth cylindrical type rotor. The effective resistance and synchronous reactance per phase are 0.15Ω And 2.5Ω. Calculate the regulation when delivering 250A at 66KV at 0.6 p.f.lead. (5M)

14 a) Drive an expression for saving of copper by the use of Autotransformer (5M)

b) Consider a 4KVA, 200/400V single phase transformer supplying full load current at 0.8 p.f lag gave the following test results;

O.C test (LV Side): 200V, 0.8A, 70W

S.C. test (HV Side): 20V, 10A, 60W

Calculate efficiency at full load 0.8 p.f.lag (5M)

15 a) Explain the types of single phase induction motor. (5M)

b) Explain how starting torque is produced in single phase induction motor (5M)

16 a) Explain principle of operation of 3 phase Induction motor (4M)

b) A 3 phase 400V, 6 poles, $50H_z$ Induction motor develops 20KW of mechanical power at 985 rpm. If the stator losses equal to 1800W neglect mechanical loss. Calculate
(i) rotor copper loss
(ii) total input power (iii) rotor efficiency (6M)

17 a) What are the types of rotor in 3 phase induction motor (5M)

b) Explain the parts of Synchronous motor (5M)

***

Code No. 79

FACULTY OF ENGINEERING

BE. 2/4 (ECE) II – Semester (Supply) Examination, December 2017

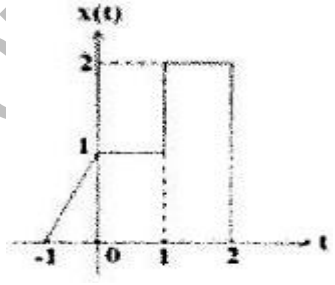
Subject: Signal Analysis and Transform Techniques

Time: 3 Hours **Max. Marks: 75**

Note: Answer all Questions from Part A and any Five Questions from Part B

PART – A (25 Marks)

1. A Continuous time system is described by y (t) = $\int_{-\infty}^{\frac{t}{3}} x(\lambda)\, d\lambda$ check the system for time invariance and stable (2)
2. Find the Nyquist rate and Nyquist interval for the continuous – time signal given below? X(t) = $\frac{1}{2\pi}$Cos (4000 πt) . *Cos* (1000 πt). (2)
3. Write Dirichlet's conditions for Convergence in Continuous time fourier series (2)
4. State and prove the following properties of continuous signal Fourier Transform (3)
   (i) Duality property (ii) Convolution property
5. Find the Laplace transform of the signal x (t) = e^{-3t} sin 2t using properties (3)
6. Given x (t) as shown in Fig



(3)

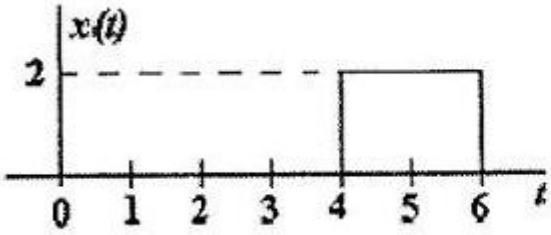
   Plot (i) x (2t-1) (ii) x (t -$\frac{3}{2}$)
7. Realize the difference equation y (n) = 2x(n) – 3x (n-1) + 4 x (n - 2) + y (n – 1) using Direct form II structure (2)
8. State and prove time shifting and multiplication properties of Z transform (3)
9. Find out the linear convolution of
   X (n) – { 1, 2, 3, -6} with h(n) = { 2, 1, -1, 3,5} (2)
   ↑ ↑
10. Explain the properties of unit impulse function (3)

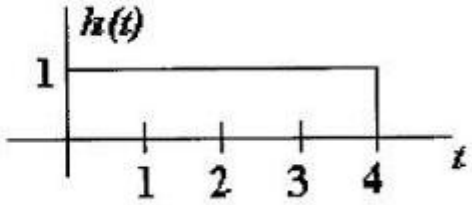
PART- B (50 MARKS)

11 a) Give the five classifications of systems with an example of each (5)
   b) State and prove the Sampling theorem for Low pass signals and also explain the reconstruction of the signal from its sample value. (5)

12 a) Determine the Fourier Series representation for signal
X (t) = sin (2 πt -5) + 2 sin (6π t) (4)
b) Define Signum and Unit step functions? Find the Continuous time Fourier transforms of Signum function and Unit step functions (6)

13 a) Find the Laplace transform of the following signals and the associated ROC in each case. (6)
(i) x (t) = e^{-2t} [u (t) – u (t -5)] (ii) x (t) = $e^{-a|t|}$
b) Find the convolution of two rectangular pulse signals shown below (4)

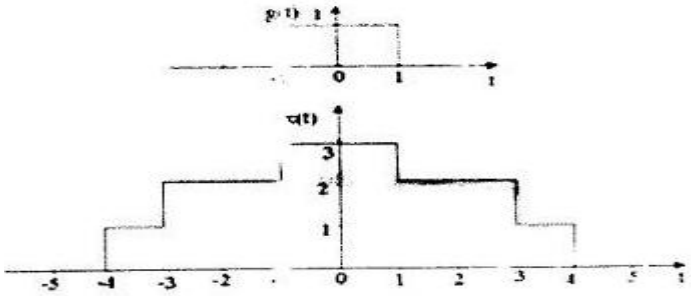




14 a) Find the Z Transform of the following sequences and mention their ROC (6)
(i) x (n) = a^n Cos Ω_0n u (n) (ii) x (n) = n^2 u (n)
b) Write the properties of ROC in Z – Transform (4)

15 a) A casual system is represented by the following difference equation (5)
Y (n) + $\frac{1}{4}$ y (n-1) = x (n) + $\frac{1}{2}$ x (n-1)
(i) Find the system function H (z) and give the corresponding region of convergence.
(ii) Find the unit sample response of the system
b) Find the Inverse Z-transform of x (z) = $\frac{Z}{(Z-1)(Z-2)(Z-3)}$ with ROC (5)
(i) |Z |> 3 (ii) |Z| < 3
(iii) 1 >| Z| < 2 (iv) 2 < |Z| < 3

16 a) with reference to Fig. Express x (t) in terms of g(t) (5)



b) With neat waveform explain the Sampling theorem and Aliasing effect. (5)

17 a) Derive the expression for the representation of a signal using orthogonal components (5)
b) Obtain the time function f(t) whose Laplace Transform is F (s) = $\frac{s2+3S+1}{(s+1)3\ (S+)2}$ (5)

****

Code No. 81

FACULTY OF ENGINEERING

B.E. 2/4 (Mech.) II - Semester (Suppl.) Examination, December 2017

Subject : Kinematics of Machines

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and answer any five questions from Part-B.

PART – A (25 Marks)

1 Differentiate lower and higher pairs with examples. (2)

2 Explain law of steering. (2)

3 Discuss angular velocity ratio theorem in Instantaneous center method of velocity analysis. (3)

4 Find the maximum angular velocity of connecting rod in a slider crank mechanism having connecting rod and crank length ratio of 4 and the crank rotates with uniform angular velocity of 150 rpm. (3)

5 Discuss the uniform wear theory of friction. (2)

6 Explain Prony brake dynamometer. (3)

7 Discuss the kinematic characteristics of parabolic follower motion. (3)

8 Classify followers (2)

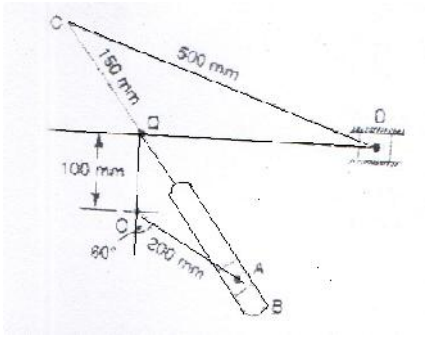
9 Explain Interference in gears (3)

10 Define back lash in gears. (2)

PART – B (50 Marks)

11 Explain the working of Peaucellier straight line motion mechanism.

12 Figure 1 shows a quick return motion mechanism in which the driving crack OA rotates at 120 rpm in a clock wise direction. For the position shown, determine the magnitude and direction of the acceleration of the block D and the angular acceleration of ht slotted bar QB.



13 (a) Explain a torsion dynamo meter with a neat sketch. (4)

(b) A flat belt is required to transmit 35 kW from a pulley of 1.5m effective diameter running at 300 rpm. The angle of contacts is spread over 11/24 of the circumference and the coefficient of friction between belt and pulley surface is 0.3. Determine, taking centrifugal tension into account, width of the belt required. It is given that the belt thickness is 9.5 mm, density of its material is 1.1. mg/m^3 and the relayed permissible working stress is 2.5 MPa. (6)

..2

14 A cam rortating clockwise with a uniform speed is give the roller follower of 20 mm diameter with the following motion:
(a) Follower to move outwards through a distance of 30 mm during 120^o of cam rotation:
(b) Follower to dwell for 60^o of cam rotation:
(c) Follower to return to its initial position during 90^o of cam rotation ; and
(d) Follower to dwell for the remaining 90^o of cam rotation.
The minimum radius of the cam is 45 mm and the line of stroke of the follower is offset 15 mm from the axis of the cam and the displacement of the follower is to take place with simple harmonic motion on both the outward and return strokes. Draw the cam profile.

15 (a) Define and prove the law of gearing. Also find the expression for velocity of sliding between gear teeth.
(b) A pair of 20^o involute gears have a module of 4 mm. The gear ratio is equal to 3. Take addendum factor for wheel is 0.9. Calculate the minimum number of teeth on pinion so that no interference occurs.

16 A planetary gear train was illustrated in Figure 2. The carrier (link 2) serves as the input to the train. The ring (gear 1) is the fixed gear and has 120 teeth. The planet gear (gear 4) has 40 teeth. The sun gear (gear 3) serves as the output from the train and has 30 teeth. Find the speed of sun gear when the input shaft rotates at 1200 rpm clockwise.

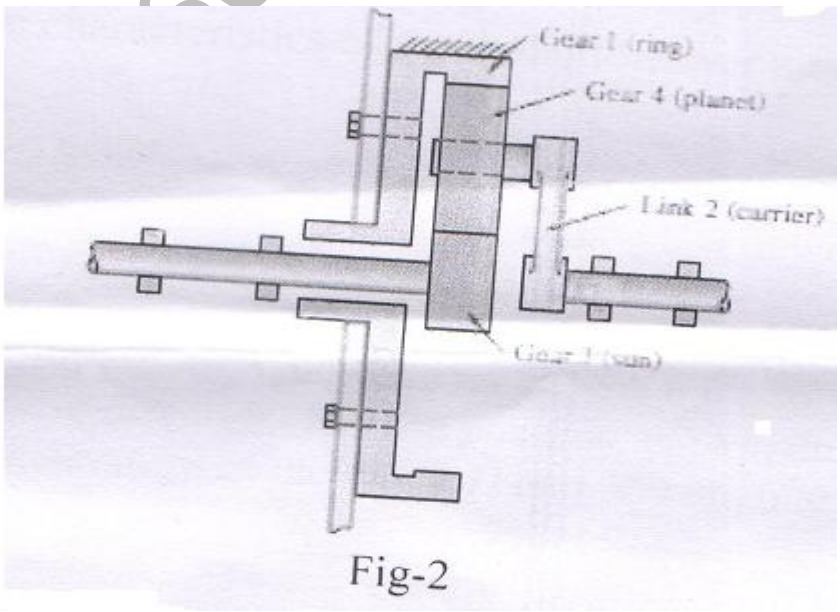


Fig-2

17 Explain any **two** of the following:
(a) Collar bearings
(b) Hooke's joint
(c) Helical gears

*****

Code No. 92

FACULTY OF ENGINEERING

B.E. 2/4 (CSE) II – Semester (Suppl.) Examination, December 2017

Subject: Principles of Programming Languages

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A and any five questions from Part B.

PART – A (25 Marks)

1	Write the significance of programming languages.	2
2	Draw a diagram of Von Neumann architecture.	3
3	what is a named constant? Give an example.	3
4	Differentiate static binding and dynamic binding.	2
5	Write the syntax of “for” statement in python, C and Ada languages.	3
6	What are guarded commands?	2
7	How getter and setter methods are defined in Ruby class?	2
8	Define task and synchronization. What are the two kinds of task and synchronization?	3
9	What is a scripting language? What are its characteristics?	2
10	List the scoping rule used in LISP and scheme.	3

PART – B (5x10 = 50 Marks)

11		Explain about List Processing Language.	10
12	a)	Explain the usage and implementation of union types in Ada.	5
	b)	Explain about short circuit evaluation with an example.	5
13	a)	What are the different parameter passing methods of subprograms? Explain with an example.	5
	b)	Explain how generic subprograms are implemented in C++ and java.	5
14		Explain how exceptions are handled in Ada with example.	10
15	a)	Describe negation problem in prolog.	5
	b)	Discuss the applications of logic programming.	5
16		Explain about ADT representation in Ada and C++ with example.	10
17	a)	Explain briefly about nested subprograms.	5
	b)	Discuss about packages in java.	5

****

Code No. 98

FACULTY OF INFORMATICS

B.E. 2/4 (IT) II-Semester (Supplementary) Examination, December 2017

Subject : Data Communication

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1	With a diagram show the main elements of a communication model.	3
2	List the various Transmission Impairments.	2
3	What is meant by Line Configuration?	3
4	Explain any Parity Bit error detection technique with example.	2
5	What are the characteristics of frame relay protocol?	3
6	What is the need for ATM adaptation layer?	2
7	Describe the basic function performed at the MAC layer.	3
8	Differentiate between bridged and switched Ethernet.	2
9	Describe Bluetooth Piconet and Sactternet.	3
10	Define CDMA.	2

PART – B (50 Marks)

11	a)	Explain the different layers of OSI reference model.	5
	b)	Briefly write about the various Transmission media.	5
12	a)	Explain in detail Pulse Code Modulation (PCM).	5
	b)	Discuss flow control mechanism with a neat diagram.	5
13	a)	Discuss briefly about HDLC data link control protocol.	5
	b)	Write about Frame Relay.	5
14		Explain in detail Circuit Switching and Packet Switching.	10
15	a)	Explain LAN protocol architecture.	5
	b)	What are the functions of a Bridge, switch and router?	5
16		Describe the architecture of IEEE 802.11.	10
17		Write short notes on :	10
	a)	Error detection techniques	
	b)	Zibbee Protocol Architecture	

******

Code No. 19

FACULTY OF ENGINEERING

B.E. II – Semester (New) (Suppl.) Examination, December 2017

Subject: Engineering Mechanics – II

Time: 3 Hours **Max.Marks: 70**

Note: Answer all questions from Part A and any five questions from Part B.

PART – A (10x2 = 20 Marks)

1 The height of centre of gravity of a solid right circular cone of base radius R and height H from its base circle is _____ H.

2 State the principle of virtual work.

3 Mention the equations of rectilinear motion of a body.

4 Find the maximum height that a stone can move, if the angle of projection is 30^o and with initial velocity of 40 m/s. (Take g = 10 m/s^2).

5 What do you mean by general plane motion? Give an example.

6 A car of 500 kg mass, takes a round of radius 50 m with a velocity of 36 km/hr. Then the centripetal force is _____.

7 Derive the work energy equation for a particle in translation.

8 A block of weight 30 N is placed on a smooth inclined plane which makes 45^o with horizontal. Calculate the work done when the block is pulled up by 5 m.

9 A 8 gm bullet is fired horizontally into a 9 kg block of wood and sticks to it. The block which is free to move, has a velocity of 40 m/s after impact. Find the initial velocity of bullet.

10 Differentiate a direct impact from oblique impact.

PART – B (5x10 = 50 Marks)

11 a) Derive an equation for finding out the center of gravity of a hemisphere from its base circle. Take base circle radius as R. 5

b) Calculate the reactions at A and B of the simply supported beam as shown in Fig. 1, by virtual work principle. 5

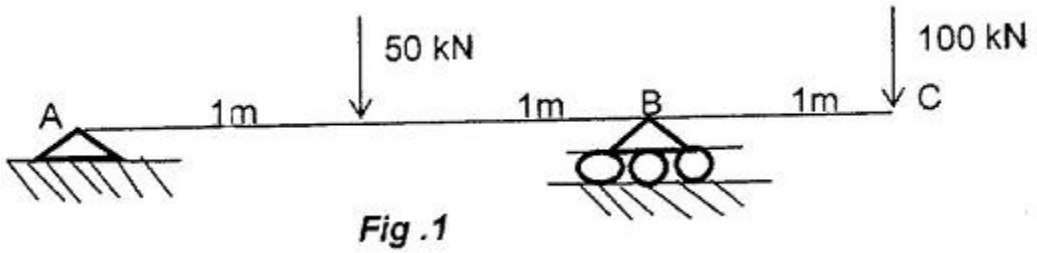


Fig .1

12 a) A ball is thrown vertically into the air at 36 m/s. After 3 sec another ball is thrown vertically. What initial velocity must the second ball have to pass the first at 30 m from ground? Take g = 10 m/s^2. 5

b) An inclined plane makes an angle of 30^o with the horizontal. A particle is projected from this plane with a speed of 5 m/s at an angle of elevation of 30^o with the horizontal as shown in Fig. 2. Find the range of the particle on the plane when it strikes the plane. 5

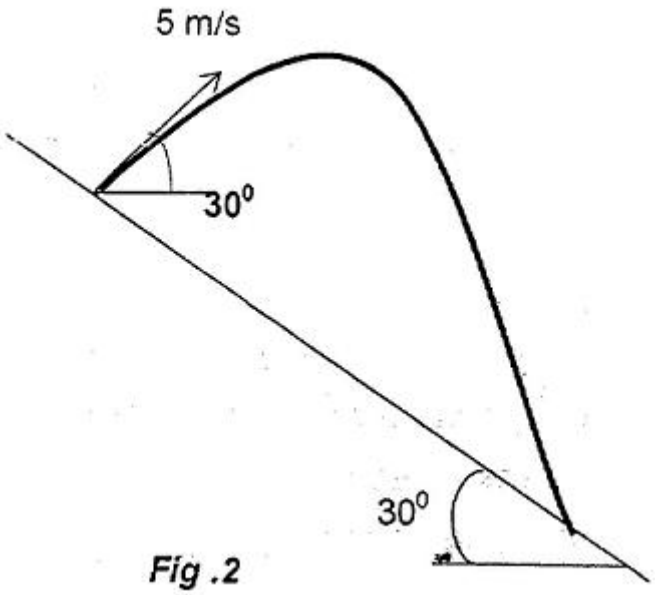


Fig .2

13 Determine the acceleration of the bodies in Fig. 3, if the coefficient of kinetic friction is 0.20 at all contact surfaces. 10

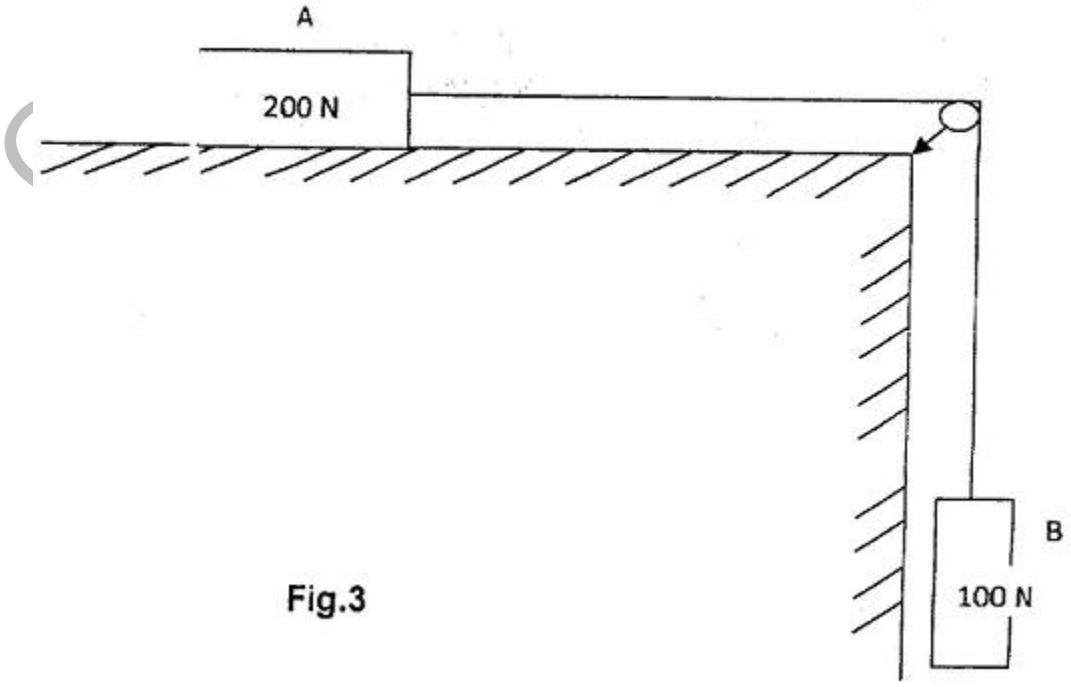


Fig.3

14 At the position shown in Fig. 4, the end A of the rod has a rightward component of velocity of 2 m/s and an upward component of acceleration of 4 m/s^2. Determine the angular acceleration of the rod at this position. 10

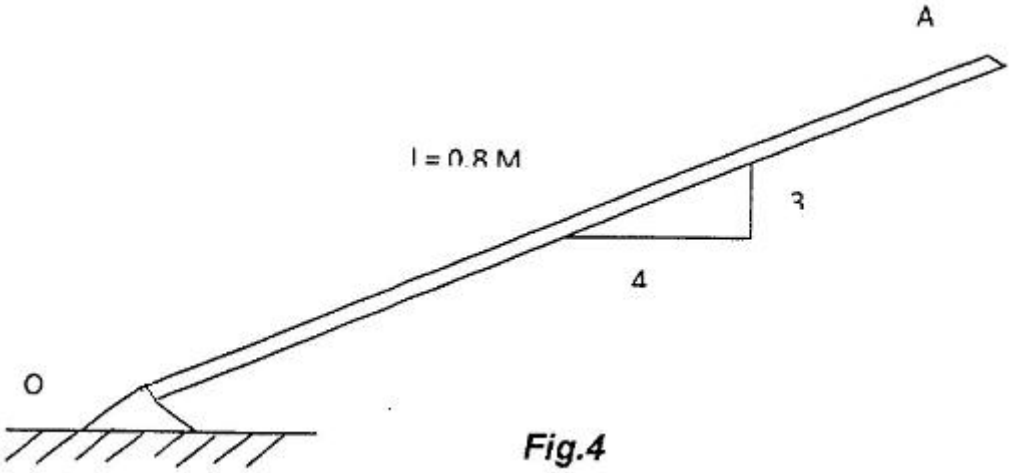


Fig.4

15 Through what distance will body A in Fig. 5 move changing its velocity from 6 m/s to 12 m/s. Assume the pulleys to be frictionless and of negligible weight. 10

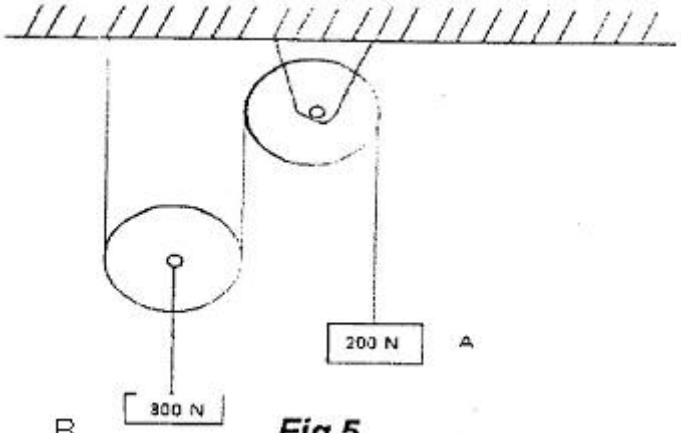


Fig.5

16 The system shown in Fig. 6 has a rightwards velocity of 3 m/s. Determine the constant value of P that will give it a leftwards velocity of 6 m/s in a time interval of 20 sec. Coefficient of friction is 0.2 for the surfaces on which a and B move. 10

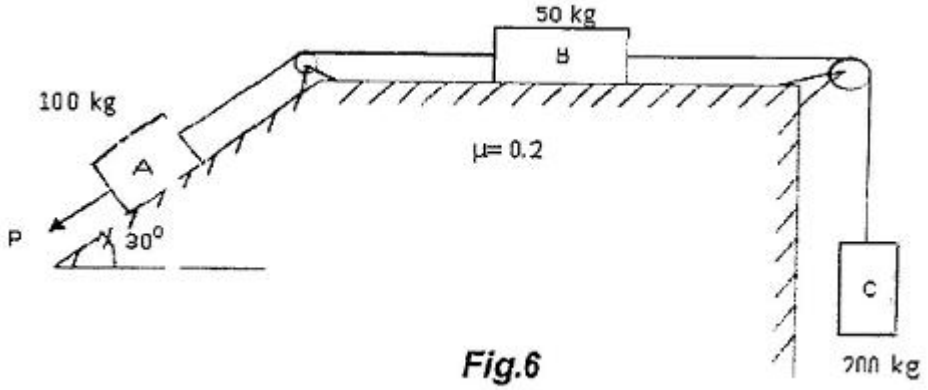


Fig.6

17 Write short notes on the following:

a) Derive an equation for mass moment of inertia for a rectangular plate of ‘bxd’ and thickness‘t’. 4

b) Work energy equations in rotation. 3

c) Coefficient of restitution. 3

****

Code No.20

FACULTY OF ENGINEERING

B.E. II – Semester (Suppl) Examination, December 2017

Subject: Elements of Mechanical Engineering

Time: 3 Hours **Max.Marks: 70**

PART – A (10 X 2 = 20)

1 Distinguish between heat engine and heat pump

2 State the zeroth law of thermodynamics with an example.

3 Draw valve timing diagram of four stroke vertical diesel engine

4 Define volumetric efficiency and overall efficiency of I.C. Engine.

5 Define thermal conductivity and list some best thermal conductors

6 distinguish between steady state and unsteady state heat transfer.

7 Sketch compound gear train and define its Velocity ratio.

8 Compare belt drive with gear train.

9 Write the engineering applications of welding, brazing and soldering

10 Sketch EBM process set up.

PART – B

11 a) Simplify the steady flow energy equation for the following applications

i) Steam turbine ii) Evaporator iii) Compressor (6M)

b) A heat engine produces 12kW power when receiving heat at the rate of 2225 kJ/minute. Estimate the corresponding rate of heat rejection from the engine and its thermal efficiency. (4M)

12 a) A wall of a building is made with a thickness of 45cm and has surface area 50m^2.

The temperature difference across the wall is 35C.K of the wall=1.25W/mk.

Determine heat flow rate through the wall. (5M)

b) Derive the expression for the LMTD of a parallel flow heat exchanger. (5M)

13 a) Explain the working of ammonia-water absorption refrigeration system (5M)

b) Explain how psychometric process is used in refrigeration purpose. (5M)

14 a) Drive the expression for the length of a cross belt. (5M)

b) Explain about the working of reverted gear train. (5M)

15 a) Explain with a neat sketch the working principle of WJM and also mention Its applications. (5M)

b) Describe the various operations that can be carried out on soldering. (5M)

16 a) Explain different thermodynamic systems with two examples in each case. (6M)

b) Describe the working of four stroke petrol engine with a neat sketch. (4M)

17 Write short notes on any tow of the following (5+5M)

a) Convective heat transfer and its applications

b) Simple gear trains and belt drives.

c) Working of a milling machine and its engineering applications

***

Code No. 22

FACULTY OF ENGINEERING

B.E (ECE) II – Semester (Suppl) Examination, December, 2017

Subject : Basic Circuit Analysis

Time : 3 Hours **Max Marks : 70**

Note: Answer all questions from4 Part – A & Any five questions from Part – B.

PART – A (20 MARKS)

1 State Kirchoff's laws?
2 State and explain Superposition theorem?
3 Define : ZIR, ZSR and Complete response?
4 What are the various solutions depending upon the type of roots obtained for an RLC circuit?
5 Define average power, apparent power and power factor?
6 Find maximum power delivered to load Z_L in the Circuit shown?

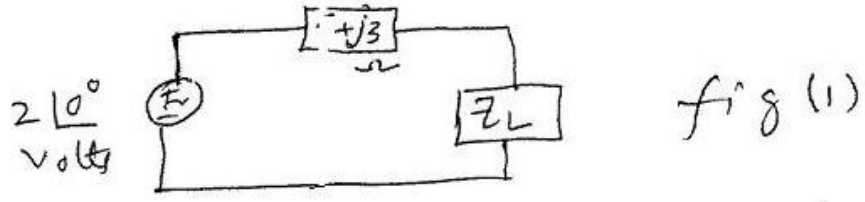
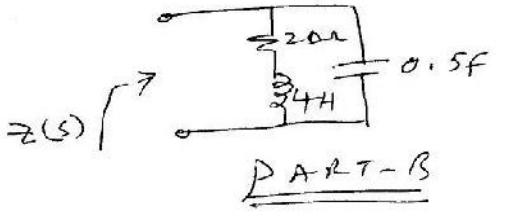


fig (1)

7 Express the ABCD – parameters of a network formed by cascade connection of two 2 – port networks?
8 Find Y- parameters of a Pi – network?
9 Define the terms quality factor & bandwidth for a series resonant circuit and relate them?
10 Draw the Pole- Zero plot of Z(S) for the network shown?

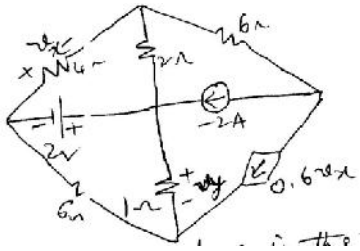


fig(2)

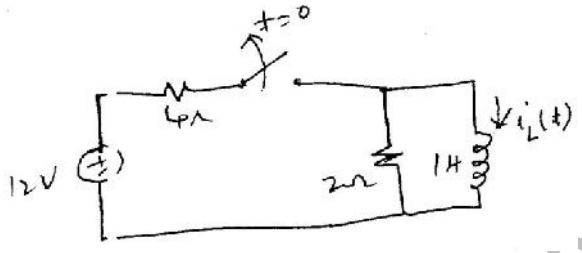
PART-B

PART B (50 Marks)

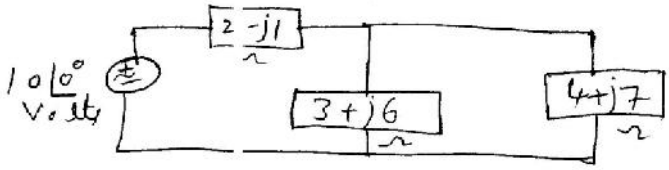
11 Using meshl analysis find V_x and V_y in the circuit shown?



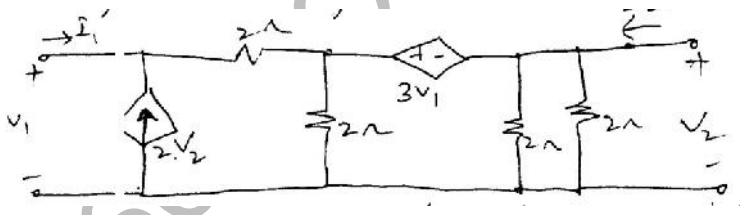
12 Find i1(t) for t > o in the circuit shown?



13 Find average power delivered to each impedance in the circuit shown?



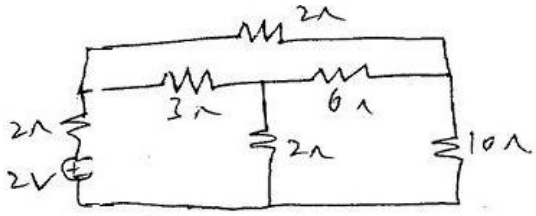
14 Find h – parameters of the circuit shown?



15 a) Find the expressions for the 3dB frequencies of a parallel resonant circuit?

b) Explain how to obtain natural response from pole – zero plot?

16 a) Write tie – set matrix for the circuit shown?



b) Explain transient response and steady state response of a linear time invariant circuit?

17 Write short notes on:

a) Magnetically coupled circuits.

b) Practical and ideal transformers

c) Duality of networks

****

Code No. 24

FACULTY OF ENGINEERING

B.E. 2/4 (CSE / IT) II - Semester (Suppl.) Examination, December 2017

Subject : Object Oriented Programming Using C++

Time : 3 Hours **Max. Marks: 70**

Note: Answer all questions from Part-A and any five questions from Part-B.

PART – A (20 Marks)

1 What are specific object oriented programming concepts? (2)

2 Identify the errors if any and find the final value of the following expression (2)
(a) Given a = 10; b = 20
(b) print f("%d%", a+++++b)

3 What are the nested classes? (2)

4 What is copy constructors? (2)

5 What do you mean by new and delete operator? (2)

6 What is exception handling? (2)

7 What are I/O streams? (2)

8 Define string. List string manipulation functions. (2)

9 Define Friend Function. (2)

10 What is the difference between single linked list and double linked list? (2)

PART – B (50 Marks)

11 (a) Explain in detail about the benefits of object oriented programming. (4)
(b) Write a C++ program to arrange the set of names in an alphabetical order. (6)

12 (a) What are the testing and debugging functions? (5)
(b) Write a C++ program to check whether the given number is prime or not. (5)

13 Define a class to represent a bank account with data members-name of the depositor, account number, type of account, balance and member functions-deposit amount, withdraw amount, show name and balance. Write a program to test this class? (10)

14 (a) Define inheritance. Explain types of inheritance with an example. (5)
(b) What is copy constructor? Write a program to demonstrate copy constructor. (5)

15 (a) Define polymorphism. (2)
(b) What is operator overloading? Explain with example the circumstances under which operator overloading becomes mandatory. (8)

16 (a) Write a program to implement stack using linked list. (5)
(b) Write C++ program to insert an element in a single – linked list. (5)

17 Define a function template giving its syntax. Write a C++ program to implement array representation of a stack for integers, characters and floating point numbers using class template. (10)

*****