Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2018 **Electronics & Communication Engineering**

First/Second Semester **Basic Electrical And Electronics Engineering**

Time: Three Hours **Maximum:** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

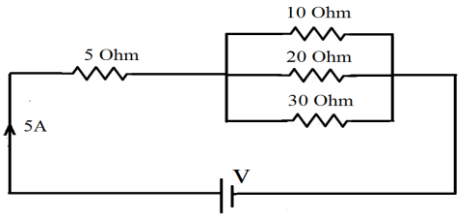
Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)
   a) What is passive element and give example.
   b) What is meant by Circuit?
   c) Distinguish between a Branch and a node of a circuit.
   d) Why transformers cores are laminated?
   e) Define Form factor and write its value for sine wave.
   f) Define Peak factor and write its value for sine wave.
   g) What are the applications of zener diode?
   h) Draw the circuit diagram of CB configuration.
   i) What is the difference between diode and zener diode?
   j) Convert hexadecimal value 16 to decimal.
   k) What are the advantages of IC's?
   l) What are the basic digital logic gates?

UNIT I

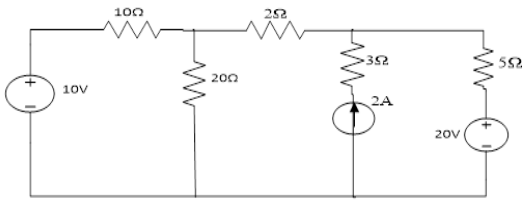
2. a) What is meant by capacitor? And write its properties also derive energy storage in an capacitor. 6M

   b) The current in the 5Ω resistance of the circuit shown in Fig below is 5 Amperes. Find the current in the 10 Ω Resistor. Calculate the power consumed by the 5Ω resistor. 6M

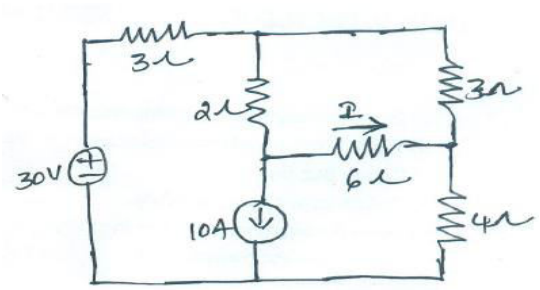


(OR)

3. a) Find the voltage across the 2Ω resistor by using the Superposition theorem. 6M



   b) Find the node voltages and current flowing through 6Ω resistor for the circuit shown below using nodal analysis. 6M



UNIT II

4. a) Explain the working principle and construction of a transformer. 8M
   b) Define the following
      (i) Time period (ii) Amplitude
      (iii) Phase difference (iv) Instantaneous value 4M

(OR)

5. a) Derive the EMF equation of transformer. 4M
   b) Derive the average, RMS value, Form Factor, Peak Factor for a sinusoidal waveform. 8M

UNIT III

6. a) With a neat sketch explain the operation of Bridge rectifier and derive the necessary equations for Bridge rectifier. 6M
   b) Explain the input and output characteristics of transistor in CC configuration with neat sketch 6M

(OR)

7. a) Explain transistor working as an amplifier 6M
   b) Explain the operation of p-n junction diode in forward and reverse bias with the help of V-I characteristics. 6M

UNIT IV

8. a) Define monolithic IC and explain the production process of monolithic ICs? 6M
   b) Convert the following numbers with the indicated bases to decimal $(2151)_5$ and $(186)_{12}$ 6M

(OR)

9. a) Explain about logic gates. 6M
   b) (i) State and prove De-Morgan's theorem 3M
   (ii) Draw the logic circuit and truth table for $X = A\overline{B} + \overline{A}C$ 3M

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION
November,2017
First/ Second Semester

Basic Electrical & Electronics Engineering
(Common to all branches)

Time: Three Hours **Maximum :** 60 Marks

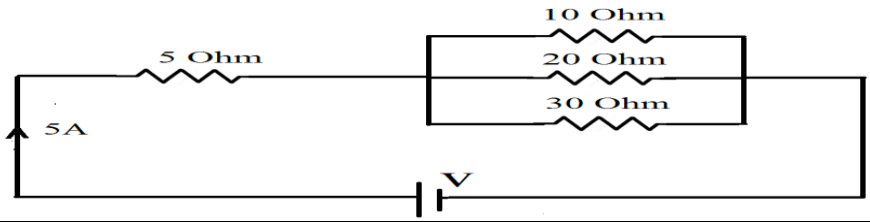
Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

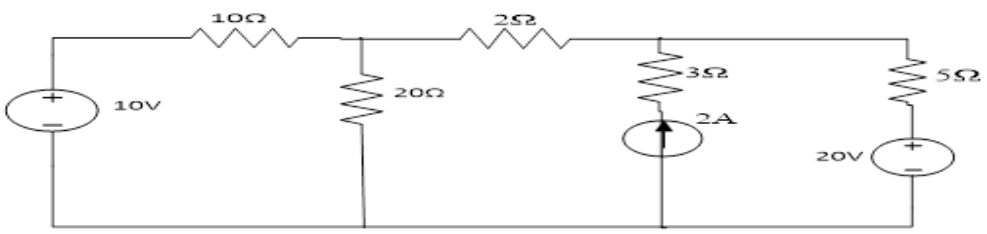
1. Answer all questions (1X12=12 Marks)

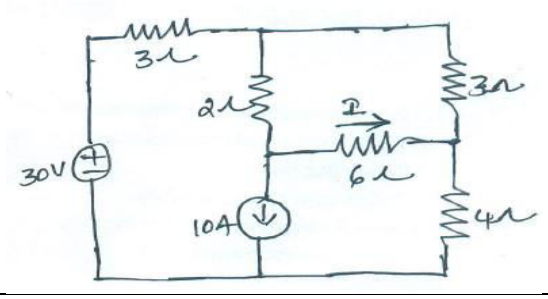
a	What is passive element and give example.
b	What is meant by Circuit?
c	Distinguish between a Branch and a node of a circuit.
d	Why transformers cores are laminated?
e	Define Form factor and write its value for sine wave.
f	Define Peak factor and write its value for sine wave.
g	What are the applications of zener diode?
h	Draw the circuit diagram of CB configuration.
i	What is the difference between diode and zener diode?
j	Convert hexadecimal value 16 to decimal.
k	What are the applications of octal number system?
l	What are the basic digital logic gates?

UNIT – I

2.a	What is meant by capacitor? And write its properties also derive energy storage in an capacitor.	6M
2.b	The current in the 5Ω resistance of the circuit shown in Fig below is 5 Amperes. Find the current in the 10 Ω Resistor. Calculate the power consumed by the 5Ω resistor. 	6M

(OR)

3.a	Find the voltage across the 2Ω resistor by using the Superposition theorem. 	6M

3.b	Find the node voltages and current flowing through 6Ω resistor for the circuit shown below using nodal analysis. 	6M

UNIT – II

4.a	Explain the working principle of a transformer.	8M
4.b	Define the following (ii) Time period (iii) Amplitude (iv) Phase difference (v) Instantaneous value	4M

(OR)

5.a	Derive the EMF equation of transformer.	4M
5.b	Derive the average, RMS value, Form Factor, Peak Factor for a sinusoidal waveform.	8M

UNIT – III

6.a	With a neat sketch explain the operation of Bridge rectifier and derive the necessary equations for Bridge rectifier.	6M
6.b	Explain the input and output characteristics of transistor in CC configuration with neat sketch	6M

(OR)

7.a	Explain transistor working as an amplifier	6M
7.b	Explain the operation of p-n junction diode in forward and reverse bias with the help of V-I characteristics.	6M

UNIT – IV

8.a	Define monolithic IC and explain the production process of monolithic ICs?	6M
8.b	Convert the following numbers with the indicated bases to decimal $(2151)_5$ and $(186)_{12}$	6M

(OR)

9.a	Difference between Combinational & Sequential Circuits.	6M
9.b	Simplify (i) Y= (A+B+C)*(A+B) (ii) Y= AB+ AC+ABC(AB+ C)	6M

14EL104/14EL204

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2018 **Common to all branches**

First/Second Semester **Communicative English**

Time: Three Hours **Maximum:** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Rewrite the given sentence with necessary corrections (1X12=12 Marks)
   a) I, you and she must have a thread fare discussion on this issue.
   b) Being a short vacation, Vikram had to return without visiting many of the places.
   c) He has an one –rupee coin
   d) The list of the participants were given to the principal.
   e) If you win you would receive and fame.
   f) He is one my friend who helped me a lot.
   g) He smokes daily.
   h) The boy is standing besides his mother
   i) Even westerns are quite superstitious. Isn't it?
   j) He is my cousin brother
   k) Two plus three are five.
   l) He is good in English

UNIT I

2. a) What are the things that "SPEED" does for destitute women? 6M
   b) Write the synonyms for the given words.
   (i). Catalyst (ii).Petite (iii). Destitute 3M
   c) Choose the correct form of the verb that agrees with the subject.
   (i). The Prime Minister, together with his wife,……. the press cordially. (greets, greet)
   (ii). Binky …… know the answer. (doesn't, don't)
   (iii). Either answer …….. acceptable. (be) 3M

(OR)

3. a) Describe Satyajit Ray's character based on Roberge's comments. 6M
   b) Write a brief note on "Pritish Nandy's views on the media". 3M
   c) Write the antonyms for the given words.
   (i). Gaudy (ii).Annoy (iii).Rigid 3M

UNIT II

4. a) What is the criticism levelled against Facebook? 6M
   b) Fill in the blanks with suitable verb forms.
   i). The meeting _____ due to lack of quorum. (postpone)
   ii). Jessie is not in. She _____ a seminar in Kansas City. (attend)
   iii). I _____ the orphan a number of times since I first met him. (help) 3M
   c) Create a mind map on your ideas on Education System in India 3M

(OR)

5. a) What is the core idea of "Business @ The Speed of Thought"? 6M
   b) Write an essay on 'Swatch Bharath'. 6M

UNIT-III

6. a) 'The scientists and Technologists should have the freedom to innovate'. How do you support the statement with knowledge on 'Taming Technology'? 6M
   b) Write a letter to the General Manger, BNVP Enterprises Ltd., requesting him/her to replace the defective computers that you bought recently. 6M

(OR)

7. a) 'The environment has become one of the constant threats from all the directions'. Write your opinion. 6M
   b) Rewrite the given sentences as directed.
   i). Pranav says that his father is a Professor. (Write the sentence in direct speech)
   ii). "Give me a glass of butter milk," he told her. (Write the sentence in indirect speech)
   iii). Nanda was repairing the computer. (Change the voice of the sentence) 3M
   c) Write a summary of the given passage in not more than 80 words. 3M

Everyone conforms to infancy, infancy conforms to nobody, so that one babe commonly makes four or five out of the adults who prattle and play to it. So God has armed youth and puberty and manhood no less with its own piquancy and charm, and made it enviable and gracious and its claims not to be put by, if it will stand by itself. Do not think the youth has no force, because he cannot speak to you and me. Hark! In the next room his voice is sufficiently clear and emphatic. It seems he knows how to speak to his contemporaries. Bashful or bold, then, he will know how to make us seniors very unnecessary.

The healthy attitude of human nature can be seen in the nonchalance of boys who are sure of a dinner, and would disdain as much as a lord to do or say ought to conciliate one. A boy is in the parlour what the pit is in the playhouse; independent, irresponsible, looking out from his corner on such people and facts as pass by, he tries and sentences them on their merits, in the swift, summary way of boys, as

good, bad, interesting, silly, eloquent, troublesome. He never cumbers himself regarding consequences, about interests and he gives an independent, genuine verdict. You should court him: he will not court you. But the man is, as it were, clapped into jail by his consciousness. As soon as he has once acted or spoken with eclat, he is a committed person, watched by the sympathy or the hatred of hundreds, whose affections must now enter into his account. There is no Lethe for this. Ah, that he could pass again into his neutrality.

These are the voices, which we hear in solitude, but they grow faint and inaudible as we enter into the world. Everywhere society is conspiring against the manhood of every one of its members. Society is joint â€“ stock company, in which members agree, for the better securing of his bread to each shareholder, to surrender the liberty and culture of the eater. The virtue in most request is conformity. It is averse to self-reliance. What it loves is names and customs and not realities and creators.

Whosoever is a man has to be a nonconformist. He who would gather immortal palms must not be hindered by the name of goodness, but must explore if it be goodness. Nothing is at last sacred but the integrity of your own mind.

No law can be sacred to me but that of my nature. Good and bad are but names very readily transferable to that to this; the only right is what is after my constitution, the only right is what is after me constitution, the only wrong what is against it. A man is to carry himself in the presence of all opposition as if everything were titular and ephemeral but he. I am ashamed to think how easily we capitulate to badges and names, to large societies and dead institutions. Every decent and well-spoken individual affects and sways me more than is right. I ought to go upright and vital, and speak the rude truth in all ways.

I shun father and mother and wife and brother, when my genius calls me. I would write on the lintels of the doorpost, whim. I hope it is somewhat better than whim at last, but we cannot spend the day in explanation. Except me not to show cause why I seek or why I exclude company. Then, again, do not tell me, as a good man did not to-day, of my obligation to put all poor men in good situations. Are they my poor? I tell thee, thou foolish philanthropist, that I grudge the dollar, the time, the cent, I give to such men as do not belong to me and to whom I do not belong. There is a class of person to whom by all spiritual affinity I am bought and sold; for them I will go to prison, if need be; but your miscellaneous popular charities; the education at collage of fools; the building of meeting â€“ house to the vain end to which many now stand; alms to sots; and the thousand fold Relief Societies; - though I confess with shame I sometimes succumb and give the dollar, it is a wicked dollar which by and by I shall have the manhood to withhold.

If you refuse to conform, you can experience the displeasure of the world. Hence, a man should know how to estimate a sour face. The by â€“ standers look askance on him in the public street or in the friend's parlour. In case this aversion originates from contempt and resistance similar to his own, it might result in a sad countenance; but the sour faces of the multitude, like their sweet faces, have no deep cause, but are caused by reasons as diverse as the direction of the wind and what he reads in the newspapers. Yet is the discontent of the multitude more formidable than that of the senate and the collage.

Another factor, which frightens us from self â€“ trust in our consistency; a reverence for our past act or word, because the eyes of others have no other data for computing our orbit than our past acts, and we are loath to disappoint them.

But why should you keep your head over your shoulder? Why drag about this corpse of your memory, lest you contradict somewhat you have stated in this or that public place? Suppose you should contradict yourself; what then?

This is a rather silly consistency in our minds, which is adored by little statesmen and philosophers and divines. Uniformly a great soul has almost nothing to do, he could just occupy himself with his shadow on the wall. Speak what you think now in hard words; and to-morrow speak what tomorrow thinks in hard words again, though it contradict everything you said to-day. â€“ "Ah, so you shall be sure to be misunderstood." - Is it so bad, then, to be misunderstood? Pythagoras was misunderstood, and Socrates, and Jesus, and Luther, and Copernicus, and Galileo, and Newton, and every pure and wise spirit that ever took flesh. What can be considered to be truly great is to be misunderstood.

UNIT IV

8. a) What makes your résumé attractive and what are the three things that can be avoided? 6M
   b) Draft a report on Ragging-Prevention and Measures to be taken in A.P Engineering Colleges to the Commissioner of Police. 6M

(OR)

9. a) What is corporate training? Write about different kinds of training. 6M
   b) Read the given passage and make notes on it in points only, using abbreviations, wherever necessary. Also Suggest a suitable title. 3M

But man is not destined to vanish. He can be killed, but he cannot be destroyed, because his soul is deathless and his spirit is irrepressible. Therefore, though the situation seems dark in the context of the confrontation between the superpowers, the silver lining is provided by amazing phenomenon that the very nations which have spent incalculable resources and energy for the production of deadly weapons are desperately trying to find out how they might never be used. They threaten each other, intimidate each other and go to the brink, but before the total hour arrives they withdraw from the brink.

   c) Fill in the blanks with suitable articles. 3M

i). I am fond of ……. classical music.
ii). He works at …….. factory.
iii). I met …….. boy in the store.

9. a. (6M)

b. Read the given passage and make notes on it in points only, using abbreviations, wherever necessary. Also Suggest a suitable title. (3M)

But man is not destined to vanish. He can be killed, but he cannot be destroyed, because his soul is deathless and his spirit is irrepressible. Therefore, though the situation seems dark in the context of the confrontation between the superpowers, the silver lining is provided by amazing phenomenon that the very nations which have spent incalculable resources and energy for the production of deadly weapons are desperately trying to find out how they might never be used. They threaten each other, intimidate each other and go to the brink, but before the total hour arrives they withdraw from the brink.

c. Fill in the blanks with suitable articles. (3M)

1. I am fond of ……. classical music.
2. He works at …….. factory.
3. I met …….. boy in the store.

14EM205/14EM105

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2018 **Common to all branches**

Second/First Semester **Engineering Mechanics**

Time: Three Hours **Maximum :** 60 Marks

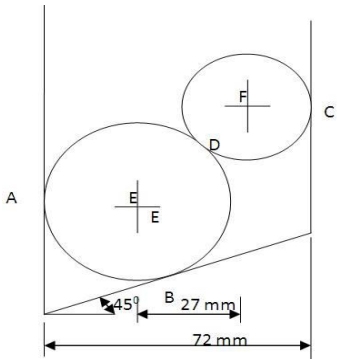
Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)
   a) State principle of Transmissibility
   b) Write the conditions for equilibrium of a body
   c) What is the centroid of a quarter circle of radius "r"
   d) State perpendicular axis theorem
   e) What is the area moment of inertia of a semi-circle with respect to an axis passing through the base of semi-circle
   f) What is an imperfect truss
   g) What is coefficient of friction
   h) Write the formulae for distance travelled in n^{th} second for a freely falling body
   i) Define Impulse force
   j) State D Alembert's principle
   k) Define mass moment of inertia
   l) What is the formulae for the normal component of acceleration in curvilinear motion

UNIT I

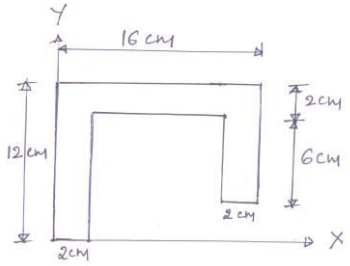
2. a) Two smooth circular cylinders of diameters 60 mm and 30 mm weighing 160 N and 40 N respectively are placed as shown in fig below. Assume all the contact surfaces to be smooth, find the reactions at A, B and C. 8M



   b) Find the Centroid of semi-circle of radius 'R' using integration method 4M

(OR)

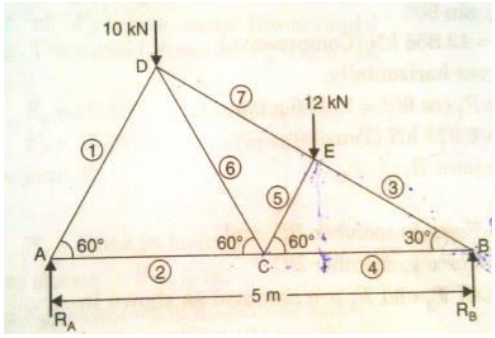
3. a) Find the Centroid of the plane area shown in figure. 8M



   b) State and prove Varignon's theorm 4M

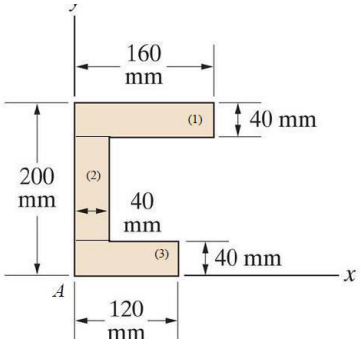
UNIT II

4. A truss of span 5mts is loaded as shown in figure. Find the support reactions and forces in all the members of the truss. 12M



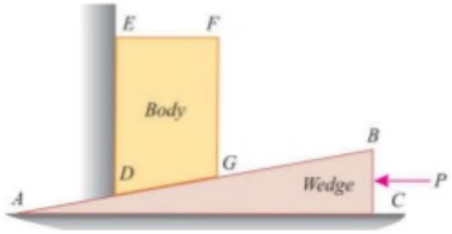
(OR)

5. Find the moment of inertia of the composite figure shown in the figure with respect to centroidal X- axis. 12M



UNIT III

6. a) A body weighing 10KN is to be raised by means of a 15^0 wedge weighing 5KN. Assuming coefficient of friction between all contacting surfaces to be 0.2, determine the minimum horizontal load to be applied to raise the block. 12M



(OR)

7. a) Two bodies of weight 20N and 10N are connected at the two ends of an inextensible string passing over a smooth pulley. The weight of the 20N is placed on a rough horizontal surface of μ=0.2 while the weight of 10N is freely hanging in the air. Find the acceleration of the system and the tension in the string. 8M

b) What are the characteristics of dry friction 4M

UNIT IV

8. a) Calculate the moment of inertia of a cylinder about its centroidal axis passing through the axis of the cylinder 8M

b) Calculate the mass moment of inertia of a circular plate about centroidal axis 4M

(OR)

9. a) A wheel rotating about a fixed axis at 20rpm is uniformly accelerated for 70 seconds during which it makes 50 revolutions. Determine the angular velocity at the end of this interval. Also calculate the time required to reach 100rpm 6M

b) A flywheel rotates freely on friction less bearings at 240rev/min. how many revolutions will it make in 10 secs after the start? Proceed to determine the angular speed if the wheel makes 500 revolutions in 15 seconds. 6M

14ES205/14ES105

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2018 **Common to all Branches**

First/Second Semester **Environmental Studies**

Time: Three Hours **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)
   a) Define Ex-situ conservation
   b) Mention two hot spots of biodiversity in India
   c) Give an example for food chain
   d) Mention two sources of renewable energy
   e) What are the 3 R in 3R-approach
   f) Mention two sources of noise pollution
   g) Define population pyramid
   h) Define watershed
   i) Expand E.I.A
   j) Mention two environmental acts
   k) Mention two international conventions
   l) Give the proposed project for silent valley

UNIT I

2. a) Give the structure for forest ecosystem. 6M
   b) Explain the methods for conservation of biodiversity. 6M

(OR)

3. a) What is the scope of environmental studies? 6M
   b) What are the threats to biodiversity? 6M

UNIT II

4. a) What are the causes for deforestation? 6M
   b) What are the causes and effects of nuclear pollution? 6M

(OR)

5. a) What are the causes for land degradation? 6M
   b) What is 3R approach? 6M

UNIT III

6. a) Explain rain water harvesting with diagram. 8M
   b) What are the effects of ozone layer depletion? 4M

(OR)

7. a) Write a short note on E.I.A. 6M
   b) What is watershed management? 6M

UNIT IV

8. a) Write a short note on forest conservation act. 6M
   b) Write a short note on ralegaon siddhi. 6M

(OR)

9. a) Write a short note on Water prevention and control act. 6M
   b) Write a short note on chipko movement. 6M

14CP106/206
116/126

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2018 **Common to all Branches**

First/ Second Semester **Problem Solving with 'C' Programming**

Time: Three Hours **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)
   a) What is an expression? Explain with an example.
   b) Write a C program to convert a given lower case character to its upper case.
   c) List arithmetic operators with their precedence and associativity.
   d) Explain how to find the length of a string.
   e) How to declare and initialize one dimensional array with an example.
   f) List out storage classes.
   g) Write a C program to swap two variable values using pointers.
   h) Define recursion and pointer.
   i) List out memory allocation functions. Write syntax for any one of those.
   j) How to define union variable? How to access union members?
   k) What is a macro? Explain with an example.
   l) Explain putc(), getc() functions.

UNIT I

2. a) What is an operator? List out various operators. Explain Relational and Logical operators with examples. Give their precedence and associativity. 6M
   b) Write a C program to find largest and smallest numbers of given three numbers. 6M

(OR)

3. a) List out decision statements. Explain any two of them with examples. 6M
   b) Write C code for finding discount amount on different types of products with discount percentages.

purchase amount 0-2000	Discount for Mill cloth 5%,	Handloom items 7.5%
purchase amount 2001-4000	Discount for Mill cloth 7.5%,	Handloom items 10.0%
purchase amount >4000	Discount for Mill cloth 10.0%,	Handloom items 15.0%

6M

UNIT II

4. a) Write a C program to find out sum of given series: $1+x+x^2/2! +x^3/3!+\ldots +x^n/n!$. 6M
   b) Define an array and give an example. Write a C program to sort given names using arrays. 6M

(OR)

5. a) Write a C program read an integer N and find the sum of all non-prime integers from 1 to N. 6M
   b) Write a C program to find prime factors of a given number. 6M

UNIT III

6. a) Write a C program to find Greatest Common Divisor of given two integers using recursion. 6M
   b) What is Dynamic memory allocation? Write a C program to search given element using pointers. 6M

(OR)

7. a) Write a C program to sort given list of values using insertion sort using pointers with explanation. 4M
   b) Explain different types of string operations. 8M

UNIT IV

8. a) Write a C program to read 60 student records (Name, Register number) and sort those records based on Register number. 5M
   b) Explain various file operations. 7M

(OR)

9. a) Write a C program to count number of characters, words and lines in a given file. 6M
   b) Write a C program using command line arguments to display the contents of a file. 6M

14EG 206/14EG 106
BT/CE/CH/EE116 CS/EC/IT/ME 116

Hall Ticket Number:

I/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION

May, 2017 **Common to All Branches**

First/Second Semester **Engineering Graphics**

Time: Three Hours **Maximum :** 60 Marks

Answer ONE question from each unit. (5X12=60 Marks)

UNIT I

1. The foci of an ellipse are 90 mm apart and minor axis is 60 mm. Determine the length of the major axes and draw the ellipse by Concentric circle method. Draw a tangent and normal to the curve at a point on it 20 mm above the major axis. 12M

(OR)

2. Draw the curve traced out by the end of a straight line 308 mm long as it rolls over the Circumference of a circle 98 mm diameter. And also draw a normal and tangent at any point on the curve. 12M

UNIT II

3. Top View of a 75 mm long Line CD, measures 50 mm. End C is in HP and 50 mm in front of VP. End D is 15 mm in front of VP and it is above HP. Draw projections of CD and find angles with HP and VP. 12M

(OR)

4. Front view of line AB makes 45^0 angle with XY line and measures 60 mm. Line's Top view makes 30^0 with XY line. End A is 15 mm above HP and it's VT is 10 mm below HP. Draw projections of line AB, determine inclinations with HP & VP and locate HT, VT. 12M

UNIT III

5. Draw a rhombus of diagonals 100 mm and 60 mm, with the longer diagonal horizontal. The figure is the top of a square of 100 mm long diagonals, with a corner on the ground. Draw its front view and determine the angle made by the plane (surface) with the ground. 12M

(OR)

6. A regular hexagon of 40 mm side has a corner in the HP. Its surface is inclined at 45^0 to the HP and the top view of the diagonal through the corner which is in the HP makes an angle of 60^0 with the VP. Draw its projections. 12M

UNIT IV

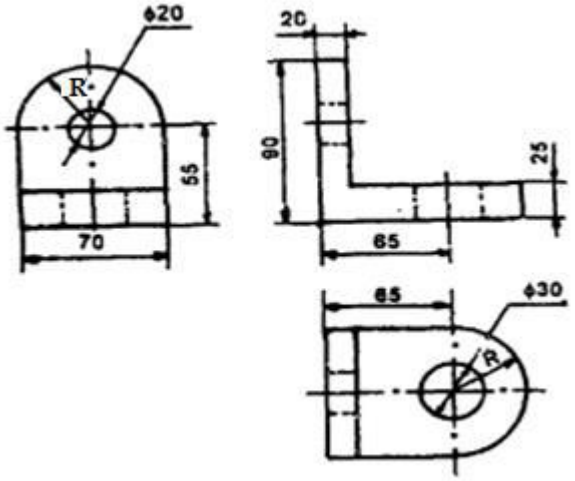
7. A cylinder 40 mm diameter and 50 mm axis is resting on one point of a base circle on VP while it's axis makes 45^0 with VP and FV of the axis 35^0 with HP. Draw projections. 12M

(OR)

8. A square pyramid, base 30 mm side and axis 70 mm long, has a triangular face on the ground and vertical plane containing the axis makes an angle of 45^0 with the VP. Draw its projections. 12M

UNIT V

9. Draw the isometric view. All dimensions are in mm 12M



(OR)

10. Draw the front view, top view and side view of the block shown below. All dimensions are in mm. 12M