I B.E. (ETC & MECH.)
Class Test I (Sept. 2016)
Sub: AMR2C1: Applied Mathematics-II

Time: 70 min **Max Marks: 20**

Note: Attempt any four questions. All questions carry equal marks. Questions must be solve at one place,

Q.1 Define linear dependence and independence of vectors. Examine for linear dependence $[1, 0, 2, 1], [3, 1, 2, 1], [4, 6, 2, -4], [-6, 0, -3 - 4]$ and find the relation between them if it exists. 5

Q.2 If $A = \begin{bmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$ then find two non-singular matrices P and Q such that PAQ=I. If possible then find A^{-1} otherwise give reason. 5

Q.3 Define consistency and inconsistency of equations. And for what values of λ and μ the given system of equations will have (i) unique solution ; (ii) no solution: 5
$2x + 3y + 5z = 9,\ 7x + 3y - 2z = 8,\ 2x + 3y + \lambda z = \mu.$

Q.4 Solve $(e^y + 1)cosxdx + e^y sinxdy. = 0$ 5

Q.5 Solve $(2y^2 + 4x^2y)dx + (4xy + 3x^3)dy = 0.$ 5

Institute of Engineering & Technology

I BE (ETC-B & MECH Engg.)

Test I - Applied Physics

16T1101

Time : 60 Min.

Note : Attempt any two questions.

Max.Marks : 20

1. Differentiate between the Interference & Diffraction of light waves. 10
2. Explain Newton's Ring experiment with their applications. 10
3. Light of wavelength 6×10^{-5} cm falls on a screen at a distance of 100 cm from a narrow slit. Find the width of the slit if the first minima lie 1.0 mm on either side of the central maxima. 10

I B.E (E&TC A&B)
Class Test I Sep-2016
COR2C5– Computer Programming

Time: 70 min **Max Marks: 20**

Note: Attempt any four questions. All questions carry equal marks.

Q1 What are keywords & Identifier? List the rules for naming a variable in C++? 5

Q2 Write a Program to calculate factorial of any number. 5

Q3 Write a Program to find out greatest integer no. among three integer number? 5

Q4 7.481 gallons in a cubic foot, write a program that asks the user to enter a number of gallons, and then displays the equivalent in cubic feet. 5

Q5 Find the output of Following Code 5

```
int j=0,i=1;
if (i & i-1)
  {
     j++;
  }
 cout<<j;
```

```
int x=20,y=35;
x=y++ + x++;
y= ++y + ++x;
cout<<x<<y;
```

```
int i=5;
++i++;
cout<<i;
```

```
char i=66;
if( i = = B)
{
cout<< i ;
i--;
}
```

```
int i=0;
i++;
if(i=0)
 cout<<"IET";
 else
 cout<<"DAVV"
```

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I B.E. (E&TC- B) (Full Time)

Class Test -I (September 2016)

MER2C3- ENGINEERING DRAWING

Time: 70 Min

Max. Marks: 20

Note: Attempt Any Four questions out of five. All questions carry equal marks.

Q.1 Draw any five types of line and describe their application. Assume suitable data if necessary. 05

Q.2 Explain principle of diagonal scale. 05

Q.3 Draw upper half of ellipse by arc of circle method and lower half by oblong method. Take Major axis as 100 mm and distance between foci is 70 mm. 05

Q.4 A stone is thrown at an angle of 45^0 to horizontal. It achieves a height of 30 meter. Find the maximum distance it travel by drawing the path it traces. Name the curve and method. 05

Q.5 Draw scale of chord and measure the internal angle of a triangle of side 4 cm, 5cm and 7 cm. 05

Exhausted

I B.E (E&TC/EI/Mech.)
Class Test I: Sep.' 16
SSR2S2: Humanities

Time: 70 min
Note: Attempt any FOUR questions. All questions carry equal marks. **Max Marks: 20**

Q.1 Societies have passed on from one stage to another – Discuss. **5**

Q.2 An individual belongs to temporary and permanent groups all through his life – Discuss. **5**

Q.3 How is Social Contract Theory different from Organismic Theory? **5**

Q.4 How is inequality penetrated into Society based on role and ethnicity? **5**

Q.5 What is the meaning of Social Institution? **5**

Medium
Marriage

I B.E. (ETC & MECH.)
Class Test II (Oct. 2016)
Sub: AMR2C1: Applied Mathematics-II

Time: 70 min **Max Marks: 20**

Note: Attempt any four questions. All questions carry equal marks. Questions must be solve at one place.

Q.1 Solve $\frac{d^2y}{dx^2} - 6\frac{dy}{dx} + 9y = 6e^{3x} + 7e^{-2x} - log2$. 5

Q.2 Solve $x^2(y-z)p + y^2(z-x)q = z^2(x-y)$. 5

Q.3 Solve $r - 3s + 2t = e^{2x-y} + e^{x+y} + \cos(x+y)$. 5

Q.4 Solve $u_{xx} - 2u_x + u_y = 0$ by the method of separation of variables. 5

Q.5 Three urns contains 6 red, 4 black; 4 red, 6 black; 5 red, 5 black balls respectively. One of the urns is selected at random and a ball is drawn from it. If the ball drawn is red find the probability that it is drawn from the first urn. 5

Institute of Engineering & Technology

I BE (ETC-B & MECH Engg.)

Test II - Applied Physics

Time : 60 Min. Max.Marks : 20

Note : Attempt all questions.

1. Explain concept of Displacement current. 4

2. State & prove Maxwell's equations. 16

OR

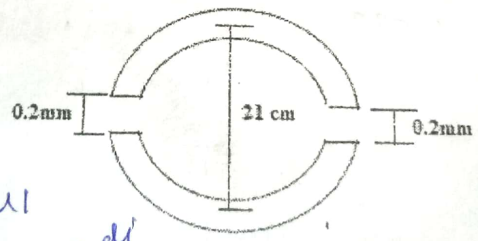
2. State & prove Poynting Vector. 16

B.E. I Yr. (Electronics and Telecommunication)
Mid Test-II
Sub: Electrical Engineering (EIR2C4)

Time: 70 min

Note: All questions carry equal marks. Attempt any four questions. **Mark: 20**

1. Define the term half power bandwidth. Derive expression for half power bandwidth with respect to series RLC circuit.
2. Two identical 750 turns coils A and B lie in parallel planes. A current changing at the rate of 1500A/s in A induces an emf of 11.25V in B. Calculate the mutual inductance of the arrangement. If the self inductance of each coil is 15mH, calculate the flux produced in coil A per ampere and the percentage of this flux which links the turns of B.
3. Explain B-H or hysteresis loop in detail.
4. A total current of 10A flows through the parallel combination of three impedance: (2-j5) Ω, (6+j3) Ω, and (3+j4) Ω. Calculate the current flowing through each branch. Find also the power factor of the combination.
5. A ring has a diameter of 21cm and a cross sectional area of $10cm^2$. The ring is made up of semicircular sections of cast iron and cast steel, with each joint having reluctance equal to an air gap of 0.2mm. Find the ampere turns required to produce a flux of 8×10^{-4} wb. The relative permeabilities of cast steel and cast iron are 800 and 166 respectively.



I year B.E.
Class Test II Oct-2016
COR2C5– Computer Programming
(E&TC A / B)

Time: 70 Minutes **Maximum Marks: 20**

Note: Attempt any four questions. All questions carry equal marks.

Q1 Write a Program to calculate Addition of two 2-D Array (using 3*4 Matrix) **5**

Q2 Write a Program to Find out Biggest and Smallest integer no in a given Array? **5**

Q3 Write a Program to Calculate the value of Sum (x, n is given by user) **5**
Sum = $x + x^2/2! + x^4/4! + x^6/6! + \ldots x^n/n!$

Q4 Write a program that calculates Sum of digit, No. of digit & Reverse a given integer no.? **5**
Find the output of Following Code

Q5 Write a program for Call by value and call by reference **5**

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BE I YEAR (ELECTRONICS & TELECOM. ENGG.) (SECTION-B)

Class Test: II (22/10/2016)

Sub. Code: ME2RC3 Subject: Engineering Drawing

Time 70 Min. Max. Marks: 20

Note: Attempt any four questions. Assume suitable data, if necessary.

Q.1 A circular plate of negligible thickness and 50 mm diameter appears as an ellipse in the front view, having its major axis 50 mm long and minor axis 30 mm long. Draw its top view when the major axis of ellipse is horizontal. 05

Q.2 Point A is 10 mm above HP and 20 mm infront of VP and Point B is 20 mm below HP and 30 mm behind VP. Find the distance between these two points. 05

Q.3 A line AB 65 mm long, has its ends A 20 mm above HP and 25 mm in front of VP. The end B is 40 mm above HP and 65 mm in front of VP. Draw the projection of AB and show its inclination with the HP and VP 05

Q.4 Projectors drawn from HT and VT of a line AB are 80 mm apart and those drawn from its ends are 50 mm apart. End A is 10 mm above HP, VT is 35 mm below HP while its HT is 45 mm in front of VP. Draw projections, locate traces and find True Length of line & inclinations with HP and VP. 05

Q.5 Line AB 100 mm long is 30° and 45° inclined to HP & VP respectively. End A is 10 mm above HP and its VT is 20 mm below HP. Draw projections of the line and it's HT. 05

Q.6 A room is of size 6.5 m L, 5 m D, 3.5 m high. An electric bulb hangs 1 m below the center of ceiling. A switch is placed in one of the corners of the room, 1.5 m above the flooring. Draw the projections and determine real distance between the bulb and switch. 05

I B.E (E&TC/EI/Mech.)
Class Test II: Oct.' 16
SSR2S2: Humanities

Time: 70 min **Max Marks: 20**

Note: Attempt any FOUR questions. All questions carry equal marks.

Q.1 Explain why personality is developmental in nature, what are the primary factors that influence the evolution of personality?

Q.2 Define value. Define attitudes. How are they similar? Different?

Q.3 A life without purpose is meaningless- comment. What is QWL?

Q.4 Differentiate between Knowledge and Technology? What is the importance of technology in Society? Explain with the help of examples.

Q. 5 who is a Hacker and Define Ethical Hacking. What to do if you identity is Stolen?

BE I Year (Electronics & Telecommunication)
Class Test III (NOV 2016)
Sub:EIR2C4:Electrical Engineering

Time: 70 min. Max Marks: 20

Note:- All questions carry equal marks. Attempt any four questions.

1. Derive a relation for 3 phase power measurement using two wattmeter method with phasor.
2. A 5KVA distribution transformer has a full load efficiency at unity power factor of 95%, the copper and iron losses are then being equal. Calculate its all day efficiency if it is loaded throughout the 24 hours as follows:

No load	10 hours
Half load	5 hours
Quarter load	7 hours
Full load	2 hours.

Assume load power factor of unity.

3. What is transformer? Draw the phasor diagram of transformer under capacitive load and explain it.
4. Why single phase induction motors are not self started. Name the different methods of starting and explain any one of them.
5. Explain in brief DC generator with suitable diagrams.

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B.E (E&TC A &B)
Class Test III NOV-2016
COR2C5– Computer Programming

Time: 70 min **Max Marks: 20**

Note: Attempt any four questions. All questions carry equal marks.

Q.1 What is Inheritance; explain its types, write a program for Single Inheritance with public derivation ? 5

Q.2 What is Friend Function, Illustrate using the suitable Example? 5

Q.3 What are Object, Class, private, Constructor, and Destructor? 5

Q.4 Write a program for Matrix Multiplication (using 3*3 matrix) 5

Q.5 Explain array of pointer with the help of suitable example ? 5

BE I YEAR (ELECTRONICS & TELECOM. ENGG.) (SECTION-B)

Class Test: III (26/11/2016)

Time 70 Min. Sub. Code: ME2RC3 Subject: Engineering Drawing

Note: Attempt any four questions. Assume suitable data, if necessary. Max. Marks: 20

Q.1 A sphere of diameter 40 mm is resting on a vertical cylinder diameter 30 mm & height 60mm. Draw its Isometric view. 05

Q.2 A square prism, base 40 mm side and height 65 mm has its axis inclined at 45° to the HP and has an edge of its base, on the HP and inclined at 30° to the VP. Draw its projections 05

Q.3 Draw the projections of a cone base 50 mm diameter and axis 75 mm long, lying on a generator on the ground with the top view of the axis making an angle of 45° with the VP. 05

Q.4 A hexagonal prism of side of base 30 mm and 70 mm long axis is resting on a face on the ground with axis parallel to the VP. It is cut by an AVP which makes an angle of 45° with the VP and passes through a point 25 mm on the axis from one of its ends. Draw the sectional front view and true shape of the section. 05

Q.5 A cone with 60 mm base diameter and 70 mm long axis is resting on its base on the HP. It is cut by a horizontal plane and an AIP which makes 45° with the HP. Both the planes meet at a point on the axis 40 mm above the base. Draw the sectional top view and true shape of the section. 05

Q.6 A cone, 50 mm base diameter and 70 mm axis is standing on its base on HP. It cut by a section plane 45° inclined to HP through base end of end generator. Draw projections, sectional views, and true shape of section and development of surfaces of remaining solid. 05

I B.E. (E&TC/E&I/Mech.)
Class Test III November 2016
SSR2S2: Humanities

Time: 70 min

Note: Attempt any FOUR questions. All questions carry equal marks. Max Marks: 10

Q.1	State any two features of India's party system.	2.5
Q.2	Summarize theories of Socialism.	2.5
Q.3	Adam Smith believed in a free market, Explain.	2.5
Q.4	What is Human factor & why is it important?	2.5
Q.5	What is Ethics & why do Engineers need to follow a code of Ethics?	2.5