XII MCVC ET: I

SJM 710150	MM : 50	HRS : 1.30

Q 1. A) FILL IN THE BLANKS (5M)

1. The open loop gain of an ideal OPAMP is ____ . (Infinity/ zero)
2. Pulse width of monostable multivibrator is given by T= _____. (1.1 RC/ RC)
3. _____ converts electrical energy to mechanical energy. (motor/ generator)
4. The instrument at remote station should always be at ____ state. (ON/OFF)
5. Stepper motor is always used in _____. (Washing machine/computer peripheral)

Q.1. B) MATCH THE COLUMN (5M)

A	B
1. D.C. motor	a. Offset adjustment
2. Astable multivibrator	b. Infrared sensor
3. Schmitt trigger	c. Negative feed back.
4. TV receiver	d. Oscillator
5. IC 741	e. Used in audio system
	f. Positive feedback

Q.1C) STATE WHETHER TRUE OR FALSE (5M)

1. A noninverting amplifier uses positive feedback.
2. OPAMP can amplify both A.C. as well as D.C..
3. The output frequency of astable multivibrator is independent of supply voltage.
4. The instruction generator is present in remote station.
5. D.C. series motor should not be turned on without connecting a load.

Q.2) ANSWER ANY GIVE QUESTIONS (20 M)

1. Draw the DIL pin configuration of OPAMP.
2. State any four ideal characteristics of OPAMP and explain each briefly.
3. State any Five applications of IC 555.
4. Define : a. Back e.m.f. b. Torque.
5. With the help of neat block diagram explain the working of ground station .
6. Draw the pin connection of IC 555.

Q.3) ANSWER ANY 5 QUESTIONS (15 M)

1. Explain the armature control method for speed control of D.C. motor.
2. Explain the necessity of speed control of D.C. motor.
3. State 3 applications of remote control.
4. Draw the circuit diagram of noninverting OPAMP. Give the equation for its output.
5. Draw the circuit diagram of bistable multivibrator using IC 555.
6. Explain Schmitt trigger with a neat circuit diagram using OPAMP .

XI MCVC ET - II

SJM 710190	MM : 50	HRS : 1.30

Q 1. A) FILL IN THE BLANKS (5M)

1. The aquadag layer of CRT is made of ____ . (graphite/ silicon)
2. DMM measures the _____value of AC voltage. (RMS/ DC)
3. Data communication uses _____method (analog/digital)
4. AM has ____ number of sidebands . (2/ infinity)
5. Red/ green/ blue are _____ primary colours. (primary/ secondary)

Q.1. B) MATCH THE COLUMN (5M)

A	B
1. Saw tooth voltage	a. navigation
2. Calliberation signal on CRO	b. infinite SB
3. GPS	c. runs mobile operating system.
4. FM	d. applied on X deflection plates
5. Smart TV	e. square wave
	f. LCD

Q.1C) STATE WHETHER TRUE OR FALSE (5M)

1. If the retrace path is visible on CRO screen the fault is in the blanking circuit.
2. Blue tooth operates at frequencies between 2400 and 2483 MHz..
3. Multiplexer allows the transmitter and receiver to share the antenna.
4. Fibre optic cables are used in aircraft communication.
5. Shutters, filters and polarizers are the important parts of LCD display.

Q.2) ANSWER ANY GIVE QUESTIONS (20 M)

1. Draw a neat labelled diagram of CRT and explain each electrode in it.
2. Draw the block diagram of DMM and describe each block.
3. Explain simplex and duplex communication system with example.
4. Define : a. AM. b. FM.
5. Write a note on interlaced scanning .
6. Write a note on plasma TV.

Q.3) ANSWER ANY 5 QUESTIONS (15 M)

1. Draw a functional block diagram of TV reciever.
2. Define : a. Synchronisation. B. aspect ratio
3. State applications of fibre optic cable.
4. Draw a neat diagram of function generator .
5. State the applications of CRO.
6. With the help of neat diagram explain working AM detector .

SJM 710101	MM : 50	HRS : 1.30

Q 1. A) FILL IN THE BLANKS (5M)

1. There are ____flags in 8085 . (5/8)
2. 80386 is a __ bit microprocessor.(32/8)
3. LXI H adder is a _____byte instruction . (3/4)
4. The conversion from digitial to analog and viceversa is done by ____. (modem/router)
5. In computer, the data bus is _____. (unidirectional/ bidirectional)

Q.1. B) MATCH THE COLUMN (5M)

A	B
1. Address bus	a. secondary device
2. Hard disc	b. cell phones
3. Microwave technology	c. +5V supply.
4. SP	d. invalid registor pair
5. 8085	e. unidirectional
	f. +10V supply

Q.1C) STATE WHETHER TRUE OR FALSE (5M)

1. The transmission rate for fibre optic cable is 100MBPS.
2. UTP cable is ideal for connecting between two buildings.
3. Passive hub does not regenerate the computer signal to networks.
4. ALU is the storage device in CPU.
5. DAD instruction only affects the carry flag.

Q.2) ANSWER ANY FIVE QUESTIONS (20 M)

1. What is microprocessor. List its functions.
2. Explain the functions of following pins in 8085 : a) HOLD b) INTR .
3. What is interrupt . Explain in detail.
4. Draw the symbols used in flow chart.
5. Explain any input two devices used in computers in brief.
6. Describe a co axial cable in detail.

Q.3) ANSWER ANY 5 QUESTIONS (15 M)

1. Explain the 3 types of semiconductor memory in detail.
2. Explain ring topology. Give its advantages.
3. Compare primary memory and secondary memory.
4. Write a short programme for addition of two numbers.
5. Describe the functions of of : a) X - X b) A - A c) AD - AD .
6. Explain Modem in detail.

XII Electronics

SJS 710121E	MM : 50	HRS : 1.30

Note: i] All questions are compulsory.
ii] Figures to the right indicate full marks.
iii] Draw neat diagram wherever necessary.
iv]Use of Log table is allowed. Calculator is not allowed

Q.1 A Select the correct alternative and rewrite the following sub questions. [4]

i) A Zener diode voltage regulator provides a constant voltage in the _____region only.
a) leakage b) forward c) breakdown d) None of these.

ii) If only Horizontal line is appearing on CRT Screen It mean is _____ section is not working
a) horizontal b) vertical c) blanking circuit d) None of these.

ii) 1:16 DEMUX can be designed with _____ select lines
a) 2 b) 4 c) 16 d) 32

iv) EBCIDIC Consists of _____ bits code

a) 4 b) 7 c) 8 d) 16

B. Attempt **any Two of** the following. [6]

i) Explain working of UJT in time base circuit of CRO.

ii) Draw variable regulator circuit using IC LM317 and design the regulator for output 12 volts, if R1=1K Ohm

iii) Explain working of a Rectifier circuit using centre tap transformer.

Q.2. Attempt **any two** of the following. [10]

i) Draw a block diagram of OPAMP and explain the function of each block

ii) Explain the working of voltage regulator using transistor. How short circuit protection is done.

ii) Draw the circuit diagram of Non Inverting amplifier and derive the expression for output Voltage,

XII Elect.
12.10.17

Q.3 A] Attempt **any Two** of the following. [10]

i) Draw a neat diagram of CRT and state its various electrodes.

ii) Explain various blocks used in Digital Multi Meter.

ii) Explain working of LC filter

Q.4. Attempt **any Two** of the following. [10]

i) Explain working of 4:1 MUX using Logic Gates

i) Explain working of 4 bit adder/subtractor with the help of circuit diagram.

ii) What is 1's complement of a binary number? Explain it with suitable example

Q.5) Attempt **any Two** of the following [10]

i) Explain the decimal to BCD encoder with the help of circuit diagram.

ii) Why NAND gates are called universal gates.

iii) Explain working of 4 bit controlled inverter using X-OR. Draw diagram. Write TT.

OR

iii) Which type of MUX will be required to implement F =(A,B,C) = (0,1,4,6). Draw diagram.

XII IT.

SJS170121I	MM : 50	HRS : 1.30

Q.1) Fill in the blank [10 M]

1) _____ tag is used to create check box.

2) In Internal css style is used as_____.

3) Sound file can be added in a web page using _____ tag with loop.

4) Software which is available for free and for a limited period is known as_____.

5) usemap is an attribute of _____ tag.

6) In css to put a line above the text _____ property is used.

7) In Ecommerce product attributes are selected by _____.

8) MPEG stands for _____.

9) For image mapping _____ types of images are used.

10) _____ is a paperless exchange of information.

Q.2) State true or false [10 M]

1) Address is the person who sends the message.

2) To give coordinate in active area of image map cords attribute is used.

3) Trade cycle is a series of exchange between consumer and business.

4) Firewall provide security to data at system level.

5) Ecommerce is an old method of doing business.

6) <frame> divides the screen into numbers of section.

7) Shareware program can be edited.

8) Search is the presale activity in trade cycle.

9) EDI is widely used by retailer.

10) Copyright is an intellectual property right.

Q.3) Select the single correct answer [10 M]

1) _____ tag is used to create inline frame

a) <frame> b) <frameset> c) <no frame> d) <iframe>

2) _____ property specifies the exact location to write text.

a) Absolute b) Relative c) position d) none

XII Sc. IT

12.10.17

3) Ecommerce business is _____.
a) Local b) Global
c) Only few states d) only in India.

4) Software available on Internet is _____.
a) Freeware b) Shareware c) Non freeware d) Public domain

5) _____ is fully service oriented.
a) Traditional commerce b) E-commerce
c) Trade Commerce d) M-Commerce

6) _____ attribute in form is used to send data from form to data base.
a) send b) method c) action d) submit

7) The <B> is an example of _____.
a) Logical style tag b) physical style tag
c) Structure tag d) none of the above

8) Improvement of trade will _____ price of product.
a) Rise b) fall c) makes stable d) none.

9) Online trading and auctions are called as _____.
a)E-market b)E-Commerce c)EDI d)None

10) _____ attribute is used to play video file with delay.
a) vol b) loop c) loopdelay d) src.

Q.4) Answer any two of the following the following. [10 M]

1) Explain the phases of trade cycle.

2) Write the ten commandments of computing?

4) Write advantages and disadvantages of ecommerce.

5) Explain intellectual property rights.

Q.5) Write code for the following html page [10 M]

1) Write html program for designing form that has text box, select box, radio button, submit and reset button.

2) Write html program to divide the screen into 3 horizontal sections and divide the middle section into two vertical parts.

XII COM-SC.

SJS 710121C	MM : 50	HRS : 1.30

12.10.17

NOTE: 1. All questions are compulsory.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks
4. Use of any type of calculator is not allowed
5. Due credit will be given for the programs with appropriate comments
6. Write both the papers in the same answer sheet

Paper I

Q.1. Answer any two of the following: **10**

1. Explain Partitioning. Distinguish between Fixed Partitioning and Variable Partitioning.
2. Explain <MARQUEE> and <A> tags with suitable Examples.
3. Write a Short note on System Security. Explain Attack on Security.

Q. 2. Answer any one of the following: **5**

1. What is a Class in C++? How are member functions defined inside and outside the Class. Explain with examples.
2. Explain Operator Overloading with suitable example.

Q. 3. Answer any two of the following: **10**

1. Write a program in C++ to print first 15 Fibonacci numbers starting from 0 and 1.
2. Write a program in C++ to find the factorial of the number using Fact() function.
3. Write a Program in C++ to accept a number and test whether it is a Prime Number or not

OR

Q. 3. Answer any two of the following: **10**

4. Write a program in C++ to demonstrator the use of Constructor and Destructor.
5. Write a C++ Program to replace every space in an inputted string (less than 80 characters) with a hyphen (i.e. -).
6. Write the HTML code for the following output.

		Year		
		2000	2001	2002
Sales	Units	500	400	500
	Income	1000	800	2000

Q. 4. Answer any two of the following: 10

1. The register B contains the data 05H and register A contain the data 09H. What will the register content after the execution of following instruction independently?

   a) RAR b) ADI B

2. Write a short note on Co-Axial Cable and Fibre Optic Cable with suitable figure.

3 . Explain the following instruction with examples.

   a) PUSH D b) MVI H 09H c) CMP M

Q. 5. Answer any one of the following: 5

1. Explain the following characteristic of transmission media:

   (i) Attenuation (ii) Cost of Media (iii) Installation Requirement.

2. Explain the Pin Diagram of 8085 Microprocessor.

Q. 6. Answer any two of the following: 10

1. A block of data is stored in memory locations C010H to C050H. Write an assembly language program to transfer the block in reverse order to memory locations C080H and onwards.

2. Write an assembly language program to exchange 8 bit number stored in memory location C000H. Store new number at memory location C050H.

3. Write an assembly language program to subtract the number stored in memory location D031H from the number stored at memory location D030H. Store the positive result at location ABB9H.

OR

Q. 6. Answer any two of the following: 10

4. Write an assembly language program to add two BCD numbers stored at locations D500H and D501H. Place the BCD result in location 3502H and onward with LSB first.

5. Write an assembly language program to find how many times data ABH appears in a memory block D050H to D059H. Store the count in register C.

6. Write an assembly language program to MULTIPLY 2 numbers stored in F050H and F051H and store the result in the next consecutive addresses.

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XII cci Biology

SJS 710101	MM : 50	HRS : 1.30

Note : 1. All questions are compulsory.
2. Answers to the questions in section-I and section-II should be written in TWO separate answer books.
3. Questions from section I attempted in the answer book of section II and vice-versa will not be assessed.
4. Draw neat and labeled diagrams wherever necessary.
5. Figures to right indicate full marks.

SECTION-I

Q1. Select and write the most appropriate answer from the given alternatives for each sub-question. **(7)**

1. In Pisum sativum which of the following traits is dominant?_____
a) White fowers b) Green flowers c) Yellow pods d) Inflated pods.

2. Which of the following is stop codon _____.
a) AUG b) GUG c) UAA d) GGU.

3. CAM plants are mostly ____.
a) tropical plants b) succulents c) monocots d) mangroves

4. In grafting, the rooted plant is used as a_____.
a) scion b) stock c) stem d) root

5. During fertilization male gametes are carried by pollen tube. This is called _____.
a) syngamy b) mesogamy c) polygamy d) siphonogamy

6. One-sixth part of the total PGAL produced is used for synthesis of _____.
a) glucose b) RUBP
c) RUMP d) DHAP

7. Which of the following is the smallest RNA_____.
a) t-RNA b) m-RNA c) r-RNA d) ds-RNA

Q2. (A). Answer each question in one sentence only. (Any 3) **(3)**

i. Enlist the component of nucleotide.

ii. Define term genotype and phenotype.

iii. What are cytochromes?

iv. What is the common method of propagaton in Bryophyllum.

v. Define triple fusion

(B) Sketch and label clover leaf model of t-RNA . **(2)**

(C) Attempt any TWO of the following. **(4)**

i. Enlist the advantages of vegetative propagation.

ii. Give graphic representation of monohybrid cross.

iii. Distinguish between cyclic and non-cyclic Photophosphorylation.

iv. Give the characteristics of genetic code.

Q3. (A). Attempt any THREE of the following. **(9)**

i. Describe the structure of 'Operon".

ii. Explain incomplete dominance with the help of chart.

iii.Give an account of calvin cycle.

iv. Describe the development of male gametophyte.

Section II

Q4) Selec t and write the most appropriate answer from the given alternative for each sub- question

i) In DNA fingerprinting technique ,radioactive DNA probe is obtained from --- of female banded krait snake (07)

a) X- chromosome b) Y- chromosome

c) X and Y chromosome d) autosome

ii)which one of the following produces anti bodies

a)B- lymphocytes b)T-- lymphocytes

c) Macrophages d)all of the above

iii) Typhoid is -------- type of disease

a)Viral b)bacterial

c)Fungal d)protozoan.

iv)which one of the following is not a sensory nerve

a) abducen nerve b)olfactory nerve

c) optic nerve d)auditory nerve

v) Convesion of ammonia into uric acid occurs in liver through

a) ornithine cycle b) guani ne cycle

c) inosine cycle d) kreb's cycle

vi)Infectious stage of plasmodium is

a) trophozoite b) sporozoite stage

c) cryptozoite stage d) metacercaria

vii) a-1 antitrypsin is used in the treatment of

a) phenylketonuria b)cystic fibrosis

c) Emphysema d)Haemophilia.

Q 5 A) answer in one sentence only (any 3) (03)

i) What is an antibody?

ii) What are kidney stones?

iii) Define Ammonotelism?

iv) Name the 3 layers that form the wall of the heart?

v) What is an interferon?

B) Draw neat and labeled diagram of dorsal view of the heart? (02)

C) Attempt any 2 (04)

i) Write the symptoms and mode of transmission of amoebiosis?

Ii) Describe the T.S .of spinal cord?

iii) Give the significance of the transgenic animals for the betterment of t he of human life?

iv) Describe different types of the cancer?

Q6) Attempt any 3 (09)

i. Explain the functions of the cerebrum?
ii. Sketch and label the structure of the nephron ?
iii. Describe the different types of the WBCs?
iv. Mention the different barriers of the innate immunity?

XII Maths Sc

SJS 710190	MM : 50	HRS : 1.30

Q1. Attempt the following [10]

(i) Find the inverse of matrix $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

(ii) Find the angle between homogenous equation $x^2 + 2xy - y^2 = 0$

(iii) Find the general solution of $\tan x = -1$

(iv) If $y = x^x$ find dy/dx.

(v) Evaluate $\int \sqrt{1+\sin 2X}\ dx$

Q2. Attempt any five of the following [20]

(i) By vector method prove that medians of a triangle are concurrent.

(ii) If $\bar{u} = \bar{i} - 2\bar{j} + \bar{k}, \bar{v} = 3\bar{i} + \bar{k}$, $\bar{w} = \bar{j} - \bar{k}$ are given vectors. Then find [$[\bar{u} \times \bar{v}\ \ \bar{u} \times \bar{w}\ \ \bar{v} \times \bar{w}]$

(iii) Solve the following equation by method of reduction.
$2x - y + z = 1,\ x + 2y + 3z = 8,\ 3x + y - 4z = 1$

(iv) Find the inverse by adjoint method. $\begin{bmatrix} 1 & 2 & 3 \\ 1 & 1 & 5 \\ 2 & 4 & 7 \end{bmatrix}$

(v) Find the joint equation of pair of lines through origin and making an equilateral triangle with the line $x = 3$

(vi) Find p and q. If the equation $2x^2 + 8xy + py^2 + qx + 2y - 15 = 0$ represents a pair of parallel line.

(vii) With usual notation in triangle ABC prove that $\sin\frac{(B-C)}{2} = \frac{(b-c)}{a} \cos\frac{A}{2}$

Q3. Attempt any Five of the following [20]

(i) If the function $f(x) = \frac{(4^{\sin x} - 1)^2}{x \log(1+2x)}$, for $x \neq 0$ is continuous at $x = 0$. Find $f(0)$

(ii) If $x^y = e^{x-y}$ show that $dy/dx = \frac{\log x}{(1 + \log x)^2}$

(iii) Differentiate $\tan^{-1}\left(\frac{\sqrt{1+x^2} - 1}{x}\right)$ w.r.t. $\tan^{-1}\left(\frac{2x\sqrt{1-x^2}}{1-2x^2}\right)$

(iv) Verify LMVT for $f(x) = x^2 - 3x - 1$, $x \in [-11/7, 13/7]$

(v) A wire of length ℓ is cut into two parts. One part is bent into a circle and other into a square. Show that the sum of areas of the circle and square is the least, if the radius of the circle is half the side of the square.

(vi) Evaluate $\int \frac{1}{\sqrt{\sin^3 x \sin(x + \alpha)}}\ dx$

(vii) Evaluate $\int \frac{1}{X^{2/3}\sqrt{x^{2/3} - 4}}\ dx$

300 Sep

XII Phy Sci.

SJS 710170	MM : 50	HRS : 1.30

Note :

1. All questions are compulsory.
2. Neat diagrams must be drawn wherever necessary.
3. Figure to the right indicate full marks.
4. Use of logarithmic table is allowed.
5. All symbols have their usual meanings unless otherwise stated.

Q. 1. (A). Select and write the most appropriate answer from the given alternatives for each sub question : (4)

1. If a particle moves in a circle, describing equal angles in equal intervals of time, its velocity vector

a) remains constant.
b) changes direction only.
c) changes magnitude only.
d) changes both magnitude and direction.

2. Modulus of rigidity of a liquid is

a) zero.
b) unity.
c) negative.
d) infinity.

3. Compressibility is the reciprocal of

a) Poisson's ratio.
b) modulus of rigidity.
c) Young's modulus.
d) Bulk modulus.

4. The equation of a simple harmonic progressive wave travelling along positive direction of x-axis is $Y = 5 \sin 2\pi [10t - x/3.2]$ meter, it's velocity is?

a) 32 m/s
b) 320 m/s
c) 31.25 m/s
d) 312.5 m/s

(B). Answer any four : (8)

1. Explain how a moving coil galvanometer is converted into an ammeter.

2. Define wavefront.
3. State the principle of superposition of waves state.
4. State Hookes law of elasticity.
5. Write any two laws of vibrating strings.

Q. 2. (A). Define angular velocity. (1)

(B). Answer any four. (12)

1. Distinguish between centripetal and centrifugal force.
2. Define critical velocity of a satellite and obtain an expression for it.
3. Explain stress versus strain graph with the help of a neat labelled diagram.
4. Two sound waves having wavelengths of 87cm and 88.5cm right respectively, when superimposed, produce 10 beats per second. Fine the velocity of the sound.
5. A potentiometer wire has a length of 4m and resistance of 4 Ω. What resistance must be connected in series with the potentiometer wire and a cell of e.m.f 2V having internal resistance 2 Ω. to get a potential drop of 10^{-3} V/cm along the wire.

Q. 3. (A) State Kirchoff's first law for electrical circuit. (1)

(B) Answer any four : (12)

1. Distinguish between overtones and harmonics. (any two points).
2. State Faraday's laws of EMI.
3. What is photoelectric effect? State its characteristics.
4. A cart of mass 2000kg rounds a curve or radius 250m at 90km/hr. Compute it's (a) angular speed (b) centripetal force.
5. Find the pressure required to decrease volume of mercury by 0.001%. (Bulk modulus of mercury = 2.8×10^{10} N/ m^2)

Q. 4. Answer any three : (12)

1. Explain refraction of light on the basis of wave theory. Hence prove the laws of refraction.
2. Derive an expression for magnetic induction at a point near infinitely long straight conductor carrying an electric current on the basis of Ampere's law.
3. The work function of caesium is 2.14 eV. Find (a) the threshold frequency of caesium. (b) the wave length of incident light if photocurrent is brought to zero by stopping potential of 0.06 V.
4. Describe Kelvin's method to determine the resistance of galvanometer by using meterbridge.

XII Che Sci

SJS 710150 MM : 50 HRS : 1.30

Note : i) Attempt all the questions, all questions are compulsory.
ii) Figure to the right indicate full marks. iii) Use of log table is allowed.
iv) Draw neat and labelled diagram & write balance chemical reactions.

SECTION – I

Q:1 Select and write the most appropriate answer from the given Alternatives for each of the following sub-questions. (1 x 4 = 4)

1) The radius ratio rule is applicable to _____.
   (a) Ionic Compound (b) Covalent Compound
   (c) Both ionic & Covalent compound. (d) All of these.
2) When NaCl is added to water , _____
   (a) Freezing point is raised. (b) Boiling point is decreased.
   (c) Freezing point is depressed. (d) Freezing point does not changed.
3) Among the following the intensive property is, _____
   (a) Internal energy (b) Heat capacity (c) Volume (d) Viscosity.
4) What will be the number of moles of sugar solution, having molality 0.556 molkg^{-1} If the mass of water sugar solution (syrup) is 180 x 10^{-3} kg.
   (a) 0.1 m (b) 0.01 m (c) 1.01 m (d) 0.001 m

Q: 2 Answer any five of the following. (2 x 5 = 10)

1) Explain the term , a) Schotty defect (b) Frankel defect.
2) Identfy the following substances as , paramagnetic , diamagnetic & Ferromagnetic,
   (a) $_{20}Ca^{2+}$ (b) $_{26}Fe$ (c) $_{11}Na$ (d) $_{17}Cl^-$
3) Give reason solid ice is lighter than liquid water.
4) Write characteristics of metallic solid.
5) What is molal elevation constant? Show that or expalin elevation in boiling point is a colligative property.
6) Define Any Two (i) Lowering of vapour pressure (ii) Molar conductivity.

Q: 3) Attemp Any Two of the following. (3 x 2 = 6)

(a) State and explain Kholrausch law with one suitable example.
(b) Derive the expression , π = CRT.
(c) distinguish between electronic conductors and electrolytic conductors. Write unit for Resistivty.

300 BxB (3)

Q:8) Attept the following,

a) Give mechanism of intramolecular dehydration of ethyl alcohol. (3M)

b) Complete the reaction, $C_2H_5OH \xrightarrow{Na} A \xrightarrow{H_5C_2—Br} B$ (2M)

OR

a) Give mechanism of conversion of O- nitrochlorobenzene into O—nitrophenol . (3M)

b) Expain the nature of C—X bond in alkyl halide. (2M)

==========X==========X==========X==========