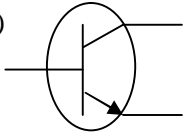
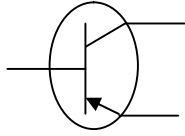
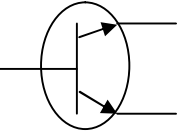
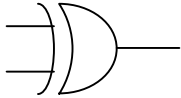
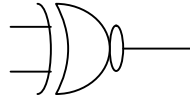
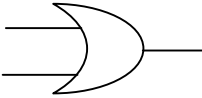


Electronics

Fundamentals of Electronics

- 01.01 What is the letter notation of diode in Plasser machine
(a) T (b) OC (c) n (d) f
- 01.02 What is the symbol of NPN Transistor.
(a)  (b)  (c)  (d) none
- 01.03 What is the symbol of EX-OR gate.
(a)  (b)  (c)  (d) none
- 01.04 What is the letter notation of PCB in Plasser machine electrical drawing?
(a) R (b) P (c) U (d) N
- 01.05 What is the letter notation of lining in Plasser machine electrical drawing?
(a) P (b) N (c) R (d) E
- 01.06 Which denotes connectors of PCB in Plasser Machine?
(a) a, b, c, (b) x, y, z (c) d, b, z (d) p, n, r
- 01.07 EK means.....(Plug in Type PCB/Connection Type PCB).
- 01.08 V means.....(Digital Control PCB/Analog Control PCB)
- 01.09 X means.....(Input to Programmer / out put from programmer)
- 01.10 Q means.....(Input to Programmer / out put from programmer)
- 01.11 What is the full form of ALC
- 01.12 What is the full form of GVA
- 01.13 DV means data sender and receiver PCB True/False
- 01.14 R means lining control circuit True/False
- 01.15 Notation A is not related DC motor control PCB True/False
- 01.16 Electronics equipments are.....
(a) Bulky and Heavy (b) Small and light (c) high voltage operated (d) None
- 01.17 Which charge carrier is in electronic component.
(a) Electrons only (b) Holes only (c) Both (d) None

- 01.18 Which is the passive component.
(a) Diode (b) Transistor (c) Op-amp (d) Capacitor
- 01.19 Which is the active component.
(a) Resistor (b) Capacitor (c) Diode (d) Inductor
- 01.20 Ic is a..... (Passive component/Active Component).
- 01.21 Zener Diode is a.....(Passive component/Active Component).
- 01.22 Capacitor is used to store the electrical energy True/False
- 01.23 Op-amp is a passive component. True/False
- 01.24 The supply voltage in electrical system are single phase, multiphase or polly phase. T/F
- 01.25 Active components can not amplify and process the signal. True/False

Semiconductor Theory

- 02.01 The conduction band is-
- (a) Same as forbidden energy
 - (b) Generally located on the top of the crystal
 - (c) Generally located on the bottom of the crystal
 - (d) A range of energy corresponding the energy of the free electron.
- 02.02 The forbidden energy gap in semiconductors-
- (a) Is always Zero
 - (b) Lies just below the valence band
 - (c) Lies between the valence band and the conduction band
 - (d) Lies just above the conduction band.
- 02.03 An electrically neutral semiconductor has-
- (a) No free electrons
 - (b) No majority carries
 - (c) No minority carries
 - (d) Equal number of holes and electrons.
- 02.04 The electron in outermost orbit is called-
- (a) Valence electron
 - (b) Covalent electron
 - (c) Acceptor Electron
 - (d) Donor Electron
- 02.05 The semiconductors have.....temperature coefficient of resistance-
- (a) Zero
 - (b) Negative
 - (c) Positive
 - (d) Variable
- 02.06 In larger orbit the electron has energy
- (a) Negligible
 - (b) Lower
 - (c) Greater
 - (d) none
- 02.07 In N type semiconductors free electrons are.....carriers-
- (a) Minority
 - (b) Majority
 - (c) Magnetic
 - (d) Neutral
- 02.08 The merging of a free electron and a hole is called-
- (a) Recombination
 - (b) Neutralization
 - (c) Restriking
 - (d) Zeroing
- 02.09 Which of the following results in the movement of a hole.
- (a) Movement of neutrons
 - (b) Movement of protons
 - (c) A vacancy is filled by a valence electron from the neighboring atom
 - (d) All of above
- 02.10 Addition of a small amount of antimony to germanium will result in-
- (a) Formation of N type semiconductor
 - (b) Move free electrons than holes in semiconductor
 - (c) Antimony concentrating on the edge of the crystals
 - (d) Increased resistance.
- 02.11 Forbidden energy gap in semiconductor is-
- (a) 1 ev
 - (b) 1.5ev
 - (c) 2 ev
 - (d) 3 ev
- 02.12 A donor type impurity must have-
- (a) No charge
 - (b) positive charge
 - (c) Only three valence electrons
 - (d) Only five valence electrons
- 02.13 A acceptor type impurity must have-
- (a) No charge
 - (b) Negative charge
 - (c) Only three valence electrons
 - (d) Only five valence electrons

- 02.14 When a semiconductor is doped its electrical conductivity-
- Increases
 - Decreases in the direct ratio of the doped material
 - Decreases in the Inverse ratio of the doped material
 - Remains unaltered
- 02.15 A P-N junction offers-
- High resistance in forward as well as reverse direction
 - Low resistance in forward as well as reverse direction.
 - Conduction in forward direction only.
 - Conduction in reverse direction only.
- 02.16 In P-N junction the region containing the uncompensated acceptor and donor ions is called-
- Transition Zone
 - Depletion region.
 - Neutral region.
 - Active region.
- 02.17 In a reverse biased P-N junction the current through the junction increases abruptly at-
- Zero voltage
 - 1.2V.
 - 0.72V
 - Break down voltage
- 02.18 Which of the following element does not have three valence electrons-
- Boron
 - Aluminium.
 - Indium
 - Phosphorous
- 02.19 Which of the following element has four valence electrons-
- Si
 - Ge.
 - Both (a & b).
 - None
- 03.20 One electron volt is equivalent to-
- 1.6×10^{-10} Joule
 - 1.12×10^{-16} Joule
 - 3.2×10^{-19} Joule
 - 1.6×10^{-19} Joule
- 02.21 The forbidden energy gap for silicon-
- 0.12 ev
 - 1.12 ev
 - 0.72 ev
 - 0.92 ev
- 02.22 The forbidden energy gap between valence band and conduction band will be wide in
- Semiconductors
 - All metals
 - Insulators
 - none
- 02.23 A semiconductor in its purest form is called-
- Intrinsic semiconductor
 - Extrinsic semiconductor
 - P-type semiconductor
 - N-type semiconductor
- 02.24 At absolute Zero temperature a semiconductor behave like-
- An insulator
 - A super conductor
 - A good conductor
 - A variable resistor
- 02.25 A semiconductor have-
- Zero temperature coefficient of resistance
 - Positive temperature Coefficient of resistance
 - Negative temperature coefficient of resistance
 - None of these
- 02.26 The process of deliberately adding impurity to a semiconductor material is called-
- Im-purification
 - Pollution
 - Deionization
 - Doping

Semiconductor Diode

- 03.01 In a semiconductor diode P-side is grounded and N-side is applied a potential of -5V through a resistance of 100Ω . The diode shall -
(a) Conduct fully (b) Not conduct (c) Conduct partially (d) None of these
- 03.02 Knee voltage of a silicon diode is -
(a) 0.1V (b) 0.2V (c) 0.3V (d) 0.7V
- 03.03 Knee voltage of a germanium diode is-
(a) 0.1V (b) 0.2V (c) 0.3V (d) 0.7V
- 03.04 In case of semiconductors, recombination is-
(a) Merging of two or more electrons (b) Merging of two or more holes
(c) Merging of an electron with a hole (d) Depletion region decreases.
- 03.05 When a P-N junction is reverse biased-
(a) Holes and electrons move away from the junction
(b) Holes and electrons move towards the junction
(c) Movement of Holes and electrons seized
(d) Depletion region decreases.
- 03.06 In case a PN -junction is forward biased-
(a) Holes and electrons seize to move
(b) Electron and holes move towards the junction
(c) Movement of holes and electrons seized
(d) none.
- 03.07 The depletion layer of a P-N Junction diode has-
(a) Only free Mobile Electrons.
(b) Only free mobile holes.
(c) Both free mobile holes as well as electrons.
(d) Neither free Mobile electrons nor holes.
- 03.08 With the rise in temperature of a PN-junction, which of the following will increase-
(a) Width of depletion layer (b) Junction barrier voltage
(c) Reverse leakage current (d) All
- 03.09 An ideal diode-
(a) Should have zero resistance in the forward bias as well as reverse bias
(b) Should have zero resistance in the forward bias and an infinite resistance in reverse bias.
(c) Should have in fine resistance in forward bias and zero resistance in reverse bias.
(d) All
- 03.10 Power diodes are generally-
(a) Silicon diode (b) Germanium diode (c) Both (d) None
- 03.11 In a reverse biased P-N junction, the current through the junction increases abruptly at-
(a) Zero voltage (b) 1.2V (c) .7V (d) Break down voltage
- 03.12 In a P-N junction, the region containing acceptor and donor ions is called-
(a) Transition Zone (b) Depletion region (c) Neutral region (d) Active region

- 03.13 A P-N junction offers-
 (a) high resistance in forward as well as reverse direction
 (b) Lower resistance in forward as well as reverse direction.
 (c) Conduction in reverse direction only.
 (d) Conduction in forward direction only.
- 03.14 Diode is a unidirectional device- True/False
- 03.15 PIV is not a rating of diode True/False
- 03.16 How many diodes in half wave rectifier-
 (a) 2 (b) 1 (c) 3 (d) 4
- 03.17 How many diodes in full wave rectifier-
 (a) 1 (b) 2 (c) 3 (d) 4
- 03.18 How many diodes in Bridge rectifier-
 (a) 1 (b) 2 (c) 3 (d) 4
- 03.19 Rectifier converts-
 (a) DC to DC (b) AC to DC (c) DC to AC (d) AC to AC
- 03.20 The maximum rectification efficiency in case of full wave rectifier is-
 (a) 100% (b) 81.2% (c) 66.6% (d) 40.6%.
- 03.21 The maximum rectification efficiency in case of half wave rectifier-
 (a) 100% (b) 81.2% (c) 66.6% (d) 40.6%
- 03.22 In a half wave rectifier, the load current flows-
 (a) Only for the positive half cycle of input signal.
 (b) Only for the negative half cycle of input signal.
 (c) For full cycle .
 (d) For less than fourth cycle.
- 03.23 The ripple factor for full wave rectifier is-
 (a) 1.21 (b) 0.96 (c) 0.64 (d) 0.482
- 03.24 The ripple factor for half wave rectifier is-
 (a) 1 (b) 0.96 (c) 0.64 (d) 0.482
- 03.25 In a full wave rectifies the load current flows-
 (a) Only for the positive half cycle of the input signal
 (b) Only for the negative half cycle of the input signal
 (c) Both a&b
 (d) none
- 03.26 In a full wave rectifier centre tap transformer is used. True/False
- 03.27 Diode is not used as a polarity protection device. True/False
- 03.28 Bridge rectifier is used for Audio and Vedio signals. True/False
- 03.29 Bridge rectifier is not used in alternator. True/False
- 03.30 In rectifier step up transformer is used. True/False

- 03.31 In a Zener diode-
 (a) Forward voltage rating is high (b) light doping (c) breakdown at low reverse voltage
 (d) none
- 03.32 A zener diode is used in-
 (a) Forward bias (b) Reverse bias (c) Zero bias (d) None
- 03.33 A Zener diode is used as a-
 (a) Regulator (b) Inverter (c) Converter (d) None.
- 03.34 Which of the following diode is designed to operate in the break down region
 (a) Signal diode (b) Power diode (c) Zener diode (d) None
- 03.35 Light emitting diode produces light when-
 (a) Unbiased (b) Forward biased (c) Reverse bias (d) None
- 03.36 What is the operating voltage of LED-
 (a) less than 1V (b) 1 to 3V (c) 3 to 4V (d) 5V
- 03.37 What is the maximum current rating of LED-
 (a) 5 to 10 mA (b) 3 to 4mA (c) 20 mA (d) 16mA
- 03.38 Photo diode is used in-
 (a) Forward bias (b) Reverse bias (c) Zero bias (d) None
- 03.39 Photo diode is made of-
 (a) Cadmium sulfide (b) Gallium (c) Arsenide (d) None
- 03.40 Opto coupler is the-
 (a) Combination of LED and photo diode or photo transistor
 (b) Combination of Zener diode and transistor.
 (c) Combination of LED and Zener diode.
 (d) None
- 03.41 LED emits no light when reverse bias . True/False
- 03.42 Ga As LED emits red light . True/False
- 03.43 Photo diode is not used in fire alarm circuit. True/False
- 03.44 Opto coupler is used for isolation of analog and digital. True/False
- 03.45 Main advantage of LED is low power consumption. True/False

Transistor

- 04.01 A PNP Transistor is made of-
(a) Carbon (b) selenium (c) Either silicon or Germanium (d) None of these
- 04.02 In most transistors the collector region is made physically larger than the emitter region-
(a) For dissipating heat (b) To distinguish it from other regions
(c) It is sensitive to ultraviolet rays (d) To reduce resistance for electron.
- 04.03 In a transistor which of the following region is very lightly doped and is very thin-
(a) Emitter (b) Base (c) Collector (d) None of these.
- 04.04 In a NPN transistor the function of the emitter is-
(a) To emit or inject holes into the collector
(b) To emit or inject electrons into the collector
(c) To emit or inject electrons into base
(d) None of these
- 04.05 In a PNP transistor, with normal bias the emitter junction-
(a) Is always reverse bias (b) has very high resistance
(c) Has low resistance (d) Remains open
- 04.06 In a NPN transistor, when emitter junction is forward bias and collector junction is reverse bias, the transistor will operate in-
(a) Active region (b) Saturation region (c) Cut off region (d) Inverted region
- 04.07 Power transistors are invariably provided with-
(a) Soldered Connection (b) Heat sink (c) Metallic casing (d) None of these
- 04.08 In a transistor leakage current mainly depends on-
(a) Doping of base (b) Size of emitter (c) Rating of transistor (d) Temperature
- 04.09 In a NPN transistor of the emitter junction is reverse bias and collector junction is also reverse bias, the transistor will operate in-
(a) Active region (b) Saturation region (c) Cutt off region (d) Inverted region
- 04.10 How many junctions in a transistor are-
(a) Two (b) Three (c) One (d) Four
- 04.11 Which is highly doped-
(a) Emitter (b) Base (c) Collector (d) None of these.
- 04.12 For a NPN transistor, negative voltage is needed at the collector True/False
- 04.13 For amplification purpose transistor is used in active region True/False
- 04.14 Common base configuration is less used because-
(a) It has low input impedance (b) It has high input impedance
(c) It does not heat up (d) It has very high gain
- 04.15 Common emitter transistor has-
(a) High current gain and high voltage gain (b) Low current gain and low voltage gain
(c) High current gain and low voltage gain (d) none.
- 04.16 The leakage current in C.B. configuration may be around-
(a) Few micro amperes (b) Few hundred micro amperes
(c) Few mili amperes (d) Few hundred mili amperes .

- 04.17 Input and output signal for CE amplifier are always-
 (a) Equal (b) In phase (c) Out of phase (d) Non of these
- 04.18 Which transistor configuration is preferred for high input and low output impedance-
 (a) Common emitter (b) Common base (c) Common collector (d) Any of these
- 04.19 The common-emitter forward current amplification factor β is given by-
 (a) I_c/I_E (b) I_c/I_B (c) I_E / I_B (d) I_B / I_E
- 04.20 The value of total collector current in CB circuit is-
 (a) $I_c = \alpha I_E$ (b) $\alpha I_E + I_{CBO}$ (c) $\alpha I_E - I_{CBO}$ (d) $I_c = \beta I_E$
- 04.21 What is the current gain of C.B.
 (a) Less than 1 (b) More than 1 (c) Equal to 1 (d) None of these
- 04.22 What is the current gain of C.E.
 (a) Approx 50 (b) Approx 100 (c) Approx 800 (d) Less than 1
- 04.23 What the input resistance of C.E.
 (a) Approx $1K\Omega$ (b) Very low (20Ω) (c) $120K\Omega$ (d) $50K\Omega$
- 04.24 The voltage gain of an amplifier is 100 and the current gain is 2 the power gain of amplifier will be-
 a) 400 (b) 200 (c) 50 (d) 1000
- 04.25 In case of a transistor α is
 a) positive and > 1 (b) positive and < 1 (c) negative and > 1 (d) negative and < 1
- 04.26 Which of the amplifier circuits using junction transistor has best gain.
 a) Common emitter (b) Common base (c) Common collector (d) All
- 04.27 As compared to a CB amplifier a CE amplifier has-
 a) Lower current amplification (b) Higher current amplification
 (c) Lower input resistance (d) All
- 04.28 CC is used in impedance matching and buffers True/False
- 04.29 Gain of CC is not less than 1 True/False

Transducer

- 05.01 Transducer converts-
- (a) Electrical energy to mechanical energy (b) Mechanical energy to electrical energy
(c) chemical energy to mechanical energy (d) None of these.
- 05.02 In track machine which type of transducer used-
- (a) Variable inductance type (b) Variable capacitance type
(c) Variable resistance type (d) none of these
- 05.03 What is the rate of output of Tamping depth transducer?
- (a) 19mv/mm (b) 11mv/mm (c) 90mm/mm (d) 23mm/mm
- 05.04 What is resistance value of potentiometer used in transducer-
- (a) 2.5 K Ω (b) 5 K Ω (c) 6 K Ω (d) 7.5 K Ω
- 05.05 In portable tamping depth transducer output voltage will be
- (a) -4.6V (b) +7.5V (c) -7.5V (d) -10V
- 05.06 Tamping depth transducer converts..... to electrical signal
(up/down movement of tamping unit or forward/reverse movement of tamping unit)
- 05.07 What is multicheck address of LHS tamping unit-
- (a) F13 (b) F14 (c) F15 (d) F10
- 05.08 Output voltage of portable tamping depth transducer in 09-3X machine-
- (a) -7.5 (b) -10V (c) -4.6V (d) -5V
- 05.09 How many tamping depth transducer in 09-3X machine-
- (a) 2 (b) 3 (c) 5 (d) 4
- 05.10 How many voltage in red colour wire in transducer-
- (a) -10V (b) +10V (c) +5V (d) -2.5V
- 05.11 How many tamping depth transducer in UNI-4S
- a) 2 (b) 3 (c) 4 (d) 5
- 05.12 During calibration of portable tamping depth transducer. Tamping Unit should be in lower position. True/False
- 05.13 Tamping depth transducer is a passive type transducer. True/False
- 05.14 Lining Transducer measures-
- (a) H₁ value of versine (b) H₂ Value of versine
(c) Both H₁ and H₂ value of versine (d) None of these.
- 05.15 What is the multicheck address of Lining Transducers-?
- (a) F02 (b) F01 (c) F06 (d) F00
- 05.16 Lining transducer converts H₁ versine to electrical signal at the rate of-
- (a) 90mV/mm (b) 11mV/mm (c) 2.3.1mV/mm (d) 25mV/mm
- 05.17 Measuring transducer measures-
- (a) H₁ value of versine (b) H₂ value of versine
(c) Both H₁ & H₂ value of versine (d) None of these.

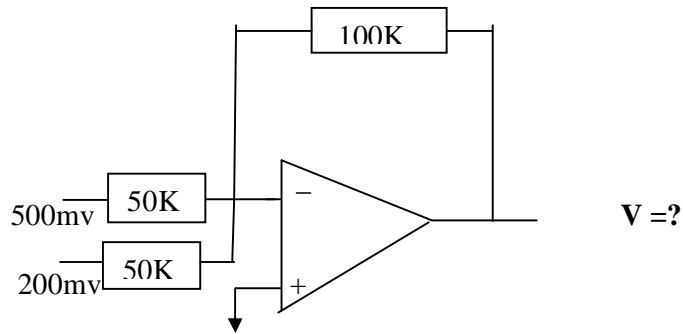
- 05.18 What is the multicheck address of measuring transducer-
 (a) F02 (b) F01 (c) F06 (d) F00
- 05.19 Satellite transducer converts displacement of satellite to electrical signal at the rate-
 (a) 23.1mV/mm (b) 11mV/mm (c) 2.3.1mV/mm (d) 90mV/mm
- 05.20 What should be out put of satellite transducer in CSM, when satellite is in front lock position-?
 (a) -8.2V (b) +8.2V (c) -8.6V (d) +8.6V
- 05.21 What should be out put of satellite transducer in 09-3X when satellite is in rear lock position-
 (a) -8.2V (b) +8.2V (c) -8.6V (d) +8.6V
- 05.22 Hook transducer is used in-
 (a) UNIMAT (b) CSM (c) Duomatic (d) 09-3X
- 05.23 Hook transducer coverts displacement of hook to electrical signal at the rate of-
 (a) 23mV/mm (b) 25mV/mm (c) 11mV/mm (d) 90mV/mm
- 05.24 What is the multicheck address of Hook transducer-
 a) F₁₈ & F₁₉ (b) F₁₄ & F₁₅ (c) F₀₁ & F₀₂ (d) F₀₆ & F₀₇
- 05.25 What should be output of Hook transducer when hook is in fully upper position-
 (a) -1.8V (b) -2.2V (c) +2.2 (d) +8.2V
- 05.26 Satellite is used in UNIMAT machine True/False
- 05.27 Hook transducer is also used in UNIMAT compact machine. True/False
- 05.28 Pendulum converts-
 (a) Cross level error to electrical signal (b) Slew value to electrical signal
 (c) Versine values to electrical signal (d) none of these.
- 05.29 Pendulum initially generates electrical signal at the rate of-
 (a) 25mV/mm (b) 23mV/mm (c) 2mV/mm (d) 90mV/mm
- 05.30 PCB in pendulum amplifies the initially generated signal at the rate of-
 (a) 2mV/mm (b) 25mV/mm (c) 19mV/mm (d) 23mV/mm
- 05.31 How many pendulums in 09-CSM machine-
 (a) 2 (b) 1 (c) 3 (d) 4
- 05.32 How many pendulums in 09-3X machine-
 (a) 2 (b) 1 (c) 3 (d) 4
- 05.33 How many potentiometers in pendulum PCB-
 (a) 2 (b) 3 (c) 2 (d) 4
- 05.34 Height transducer converts-
 (a) Longitudinal level to electrical signal (b) Cross level to electrical signal
 (c) Versine to electrical signal (d) None of these
- 05.35 Height transducer converts longitudinal level to electrical signal at the rate of-
 (a) 25mV/mm (b) 90mV/mm (c) 19mV/mm (d) 23mV/mm

- 05.36 What is the multicheck address of height transducer-
(a) F0D & F0E (b) F01 & F02 (c) F14 & F15 (d) F04 & F06
- 05.37 How many numbers of height transducers in tamping machines-
(a) 3 (b) 4 (c) 2 (d) 1
- 05.38 Encoder converts-
(a) Displacement of machine to digital signal (b) Displacement of satellite to digital signal
(c) Both (d) None of these
- 05.39 Encoder converts displacement of machine to digital signal at the rate of-
(a) 100 Pulse/meter (b) 1000 Pulse/meter (c) 10 Pulse/meter (d) None of these
- 05.40 In which machine encoder is not used-
(a) UNIMAT (b) CSM (c) 09-3X (d) DGS
- 05.41 During calibration of height transducer leveling chord tension is not provided True/False
- 05.42 During calibration of pendulum, Mechanical adjustment should be done first. True/False

Operational Amplifier

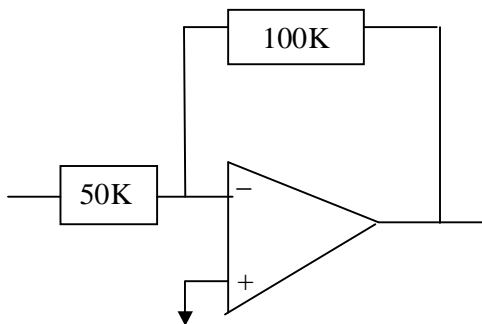
- 06.01 Operational amplifier is an.....amplifier-
(a) Direct coupled (b) R.C. Coupled (c) LC coupled (d) None of these.
- 06.02 Operational amplifier has.....Input terminals-
(a) 1 (b) 2 (c) 3 (d) 4
- 06.03 Operational amplifier has.....output terminals-
(a) 1 (b) 2 (c) 3 (d) 4
- 06.04 Power supply of op-amplifier is.....
(a) $\pm 5V$ (b) $\pm 10V$ (c) $\pm 15V$ (d) none
- 06.05 Open loop gain of practical op-amp is.....
(a) 10^6 (b) 10^7 (c) 10^8 (d) 10^9
- 06.06 Open loop gain of ideal op-amp is.....
(a) 0 (b) ∞ (c) 10^8 (d) 10^9
- 06.07 Input resistance of ideal op-amp is.....
(a) 1Ω (b) 10Ω (c) 100Ω (d) ∞
- 06.08 Input resistance of practical op-amp is.....
(a) $10^6M\Omega$ (b) $10^8M\Omega$ (c) $10^9M\Omega$ (d) ∞
- 06.09 Output resistance of ideal op-amp is..-
(a) 0Ω (b) 100Ω (c) 1000Ω (d) $\infty\Omega$
- 06.10 Output resistance of practical op-amp is-
(a) 100Ω (b) 75Ω (c) 1000Ω (d) $10^6\Omega$
- 06.11 Positive feed backing of op-amp is used in.....
(a) Amplifiers (b) Switching circuits (c) Rectifiers (d) None of these
- 06.12 Negative feed backing of op-amp is used in.....
(a) Amplifiers (b) Switching circuits (c) Rectifiers (d) None of these
- 06.13 Op-amp has one input terminal and two output terminal True/False
- 06.14 Ideal op-amp has zero input impedance. True/False
- 06.15 Ideal op-amp has infinite gain. True/False
- 06.16 Ideal op-amp has flat band width. True/False

06.17 Output of following Op –Amp is....



- (a) -2.8V (b) -1.4 V (c) +2.8 V (d) -700 mv

06.18 Output of following op-amp is.....-

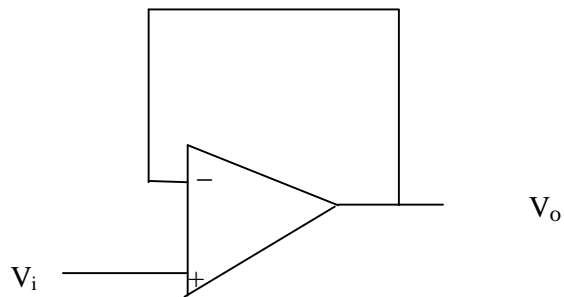


- (a) -2V (b) -4V (c) +2V (d) +4V

06.19 Maximum output voltage of operational amplifier is.....

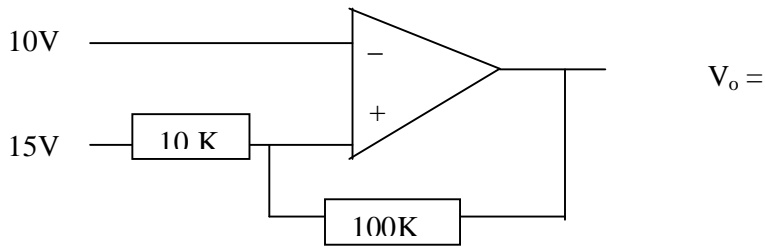
- (a) $\pm 14V$ (b) $\pm 15V$ (c) ± 10 (d) ± 24

06.20 The following circuit represents.....



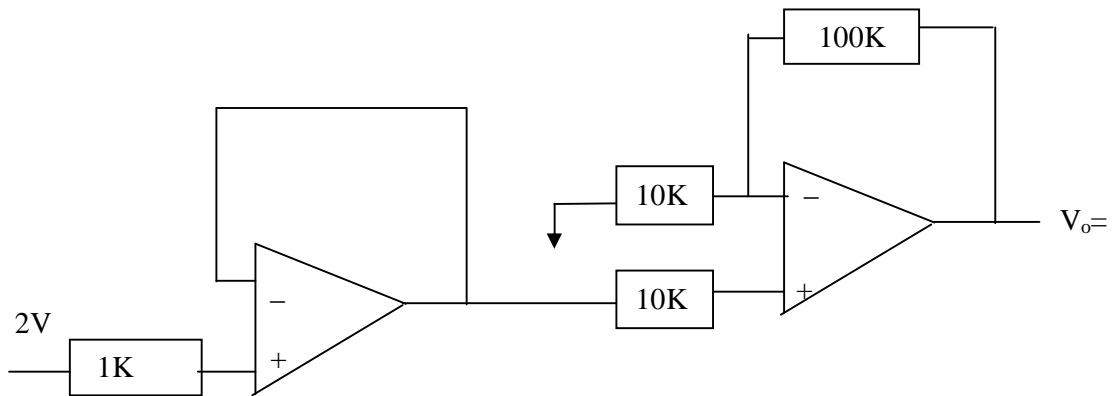
- (a) Differentiator (b) Adder (c) Buffer (d) Multiplier

06.25 Output of following op-amp is.....



- (a) 25V (b) 2500V (c) 2525 (d) +V_{sat}

06.26 Output of following op-amp is.....



- (a) 20V (b) 22V (c) 200 (d) 220V

06.27 Schmitt trigger converts any type of wave shapes signal to square wave signal- True/False

06.28 Comparator is a circuit which does not compare signals. True/False

06.29 Subtractor subtracts the input signals True/False

06.30 Limiter is not used in Tamping Unit control circuit True/False

06.31 Op-amp can not performs mathematical calculations True/False

06.32 Integrator provides on output voltage which is proportional to the integral of input voltage. True/False

06.33 Differentiator provides on output voltage which is proportional to the rate of change of the input voltage. True/False

06.34 Op02 Ic is a.....
 (a) Single op-amp (b) Dual op-amp (c) Quad op-amp (d) None of these

06.35 Op-741 Ic is a.....
 (a) Single op-amp (b) Dual op-amp (c) Quad op-amp (d) None of these

06.36 Op 02 Ic is a
 (a) 10pin (b) 8 pin (c) 14 pin (d) 16 pin

06.37 Op 04 Ic has.....
 (a) 2 op-amp (b) 3 op-amp (c) 4 op-amp (d) 6 op-amp

Digital Electronics

- 07.01 The number of levels in a digital signal is.....
(a) One (b) Two (c) Four (d) Ten.
- 07.02 The high voltage level of a digital signal in positive logic is.....
(a) 1 (b) 0 (c) Either 1 or 0 (d) None of these
- 07.03 A device that converts from decimal to binary number is called-
(a) Decoder (b) Encoder (c) CPU (d) Converter
- 07.04 Decimal 15 in binary system can be written as-
(a) 1111 (b) 1110 (c) 1100 (d) 1000
- 07.05 In decimal system the base or radix is.....
(a) 0 (b) 1 (c) 9 (d) 10
- 07.06 A binary system has radix of.....
(a) 0 (b) 1 (c) 2 (d) None of these
- 07.07 The radix of a hexadecimal system is-
(a) 2 (b) 8 (c) 10 (d) 16
- 07.08 octal 16 is equal to decimal
(a) 13 (b) 14 (c) 15 (d) 16
- 07.09 The decimal equivalent of Hexadecimal number $(ABC)_{16}$ is....
(a) 348 (b) 2583 (c) 2748 (d) 33
- 07.10 The number of binary bits required to represent a hexadecimal number is-
(a) 4 (b) 8 (c) 3 (d) 16
- 07.11 The number of binary bits required to represent octal number is-
(a) 24 (b) 3 (c) 16 (d) 8
- 07.12 A logic gate is an electronic circuit which-
(a) Makes logic decision (b) Allows electron flow only in one direction
(c) Works on binary algebra (d) None of these
- 07.13 The output of a 2-input OR gate is zero only when its-
(a) Both inputs are 0 (b) Either input is 1 (c) Both input are 1 (d) Either input is 0
- 07.14 An X OR gate produces an output only when its two input are-
(a) High (b) Low (c) Different (d) None of these
- 07.15 A NOR gate is ON only when all its inputs are-
(a) Low (b) Positive (c) High (d) None of these
- 07.16 A NAND gate is called a universal logic gate because-
(a) It is used by everybody
(b) Many digital computer use NAND gates
(c) Any logic function can be realized by NAND gate alone
(d) None of these

- 07.17 If any or all inputs are low then output is in NAND gate-
 (a) Low (b) High (c) Both (d) None of these
- 07.18 In any flip flop when the Q output is 1, what is the state of the \bar{Q} terminal-
 (a) 0 (b) 1 (c) either 0 or 1 (d) None of these
- 07.19 A flip –Flip is basic memory element. True/False
- 07.20 Digital circuits operates with pulses. True/False
- 07.21 In binary number system there are three digits 0,1 and 2.. True/False
- 07.22 Binary 111 equivalent to decimal 7 True/False
- 07.23 Binary system is not used in digital computer. True/False
- 07.24 In the microprocessor micro word indicates its-
 (a) Computing power (b) Physical size (c) Memory size (d) Non of these.
- 07.25 The first microprocessor was introduced inINTEL corporation USA
 (a) 1968 (b) 1970 (c) 1971 (d) 1980
- 07.26 The first Indian Microprocessor is-
 (a) 8085 (b) 8080 (c) SCL6502 (d) 8086
- 07.27 In which machine, Microprocessor based system is not used-
 (a) Unomatic (b) UNIMAT (c) CSM (d) DGS
- 07.28 1 Byte is equal to.....
 (a) 6 bits (b) 8 bits (c) 4 bits (d) 16 bits
- 07.29 1 Nibble is equal to-
 (a) 6 bits (b) 8 bits (c) 4 bits (d) 16 bits
- 07.30 What is memory addressing capacity of 16 bit wide address bus microprocessor-
 (a) 1 K byte (b) 1 Megabyte (c) 64 kilobyte (d) 512 bits
- 07.31 RAM is a.....
 (a) Nonvolatile memory(b) Volatile memory (c) Magnetic memory (d) None of these
- 07.32 ROM is a
 (a) Nonvolatile memory(b) Volatile memory (c) Magnetic memory (d) None of these
- 07.33 Memory address is usually-
 (a) A decimal number (b) A binary number (c) Octal number (d) Hexa decimal number
- 07.34 EPROM contents can be erased by exposing it to-
 (a) Infra red rays (b) Ultraviolet light (c) Intense heat radiation (d) None of these
- 07.35 Hard disc is a.....
 (a) Semiconductor memory (b) Magnetic Memory (c) Both (d) None of these
- 07.36 A multiplexer-
 (a) Has multiple inputs and a single out (b) Has a single input and multiple out
 (c) Stores data in multiple bits (d) Multiply 4 bit data

- 07.37 RAM is a read and write memory. True/False
- 07.38 ROM is not a read only memory True/False
- 07.39 Pentium is not a microprocessor True/False
- 07.40 Magnetic memory is volatile memory True/False
- 07.41 A group of wire is called bus True/False
- 07.42 Magnetic memory is slower than semiconductor memory True/False
- 07.43 A number of binary digits that makes the word is the word length. True/False

Electronics Circuits and PCBs

- 08.01 Which is not the advantage of discrete circuit-
(a) Rectification of fault is easy (b) Power rating of circuit is high
(c) Manufacturing is easy (d) Bulky.
- 08.02 Which is not the advantage of Ic-
(a) Cheaper than discrete circuits (b) Light weight
(c) Occupied very less space (d) Nonrepairable
- 08.03 PCB calculates-
(a) Back time (b) Track parameter (c) Track error (d) None
- 08.04 Full form of Ic is -
(a) Internal combustion (b) Industrial control (c) Integrated Circuit (d) Indian Culture
- 08.05 Pendulum control PCB in CSM is.....
(a) EK348LV (b) EK346LV (c) EK347LV (d) EK345LV
- 08.06 Satellite compensation PCB in CSM is.....-
(a) EK345LV (b) EK346LV (c) EK347LV (d) EK348LV
- 08.07 Programmer PCB in CSM is.....-
(a) EK501P (b) EK502P (c) EK503P (d) None
- 08.08 Tamping Unit control PCB in 09-3X machine is
(a) EK16V (b) EK1AP7 (c) EK1AP13 (d) EK176V
- 08.09 Multiplexer PCB in 09-3X machine is.....
(a) EK28V (b) EK207V (c) EK24V (d) None
- 08.10 Hook control PCB in UNIMAT 3S is-
(a) EK144V (b) EK132V (c) EK120V (d) None
- 08.11 Levelling control PCB in WST is-
(a) EK2041LV (b) EK2042LV (c) EK3069LV (d) None
- 08.12 Lining control PCB in WST is-
(a) EK2038LV (b) EK2286LV (c) EK2173LV (d) EK2072LV
- 08.13 Tamping Unit control PCB in UNIMAT-4S is-
(a) EK176V (b) EK132V (c) EK1AP7 (d) EK1AP13
- 08.14 Which one is related to intercom system-.
(a) EL-T 631 (b) EL-T 277 (c) EL-T 7045 (d) EL-T 7010
- 08.15 Dual in line package of Ic is used in machine True/False
- 08.16 Full form of PCB is public control board True/False
- 08.17 In Ics terminal numbering is counting in anti clock wise direction from mark, grooved or nose True/False

Power Supply

- 09.01 $\pm 15V$ is used for-
(a) Digital display (b) Op-amp (c) Programmer PCB (d) Transducers.
- 09.02 $\pm 10V$ is used for-
(a) Digital display (b) Op-amp (c) Programmer PCB (d) Transducers.
- 09.03 $\pm 12V$ is used for-
(a) Digital display (b) Op-amp (c) Programmer PCB (d) Transducers.
- 09.04 $+5V$ is used for-
(a) Digital display (b) Op-amp (c) Transducers. (d) None
- 09.05 Power supply PCB is called-
(a) Converter (b) Inverter (c) Rectifier (d) None
- 09.06 What is the output of EK813SV-
(a) $\pm 10V, \pm 5V$ (b) $\pm 15V, \pm 10V$ (c) $\pm 15V, \pm 12V$ (d) $\pm 5V, \pm 12V$
- 09.07 Power supply PCB EK816 SV is used in-
(a) CSM (b) UNIMAT (c) 09-3X (d) None
- 09.08 Power supply PCB EK819SV is used in-
(a) 09-3X (b) CSM (c) UNIMAT-4S (d) UNIMAT-3S
- 09.09 DC to DC converters are not a regulated power supply PCBs- True/False
- 09.10 There are three outputs in power supply PCB EK816SV- True/False
- 09.11 What is the output of power supply PCB EK812SV-
(a) $+24V, +12V$ (b) $+15V$ (c) $\pm 15V, \pm 10V$ (d) $\pm 10V$
- 09.12 Output of power pack is-
(a) $\pm 10V$ (b) $\pm 15V$ (c) $+12$ (d) $+5V$
- 09.13 How many No. of power supply PCB EK813SV in CSM-
(a) 3 (b) 4 (c) 6 (d) 5
- 09.14 How many No. of power supply PCB EK813SV in 09-3X-
(a) 2 (b) 3 (c) 4 (d) 5
- 09.15 How many No. of power supply PCB EK813SV in UNIMAT-
(a) 2 (b) 3 (c) 4 (d) 5
- 09.16 Which PCB output is $\pm 10V, \pm 15V$ & $+5V$ -
(a) EK813SV (b) EK815SV (c) EK812 (d) EK819SV
- 09.17 How many power pack is used in EK816SV-
(a) 2 (b) 1 (c) 3 (d) None
- 09.18 Which power supply PCB is used in Lining control circuit in 09-3X-
(a) EK813SV (b) EK816 SV (c) EK812SV (d) EK851SV

- 09.19 Which power supply PCB is used for note book in 09-3X-
(a) EL-T 663 (b) EL-T 7155 (c) EK805 SV (d) EK819SV
- 09.20 Which power supply is used for P-500 programmer-
(a) EK813SV (b) EK812SV (c) EK805SV (d) EK819SV
- 09.21 Which PCB is used in auto positioning circuit in 09-3X -
(a) EK816SV (b) EK812SV (c) EK819SV (d) EK805SV
- 09.22 Which power supply PCB is used tamping control circuit in 09-3X machine-
(a) EK813SV (b) EK812SV (c) EK805SV (d) EK816SV
- 09.23 What is the output of EK851SV-
(a) +12V, +5V (b) $\pm 10V$, $\pm 15V$ (c) +15V (d) +10V
- 09.24 Which power supply is used for digital display-
(a) EK805SV (b) EK812SV (c) EK819SV (d) None
- 09.25 Which is the output of EK819SV-
(a) $\pm 10V$, $\pm 15V$ (b) ± 5 , $\pm 10V$ (c) +5, $\pm 15V$, $\pm 10V$ (d) None
- 09.26 Which power supply PCB is used in imported Duomatic-
(a) EK816SV (b) EK819SV (c) EK815SV (d) None
- 09.27 Which PCB is used in tamping unit control circuit in imported Duomatic-
(a) EK813SV (b) EK816SV (c) EK819SV (d) None

Programmer unit and Logic Plan.

10.01. Programmer PCB used in CSM.

- (a) EK501P (b) EK502P (c) EK503P (d) EK553P

10.02. Programmer PCB used in Unimat 2S

- (a) EK501P (b) EK502P (c) EK503P (d) EK553P

10.03. Programmer PCB used in 09- 3X.

- (a) EK553P (b) EK502P (c) EK650P (d) EK554P

10.04. Programmer PCB used in WST.

- (a) EK601P (b) EK650P (c) EK653P (d) EK654P

10.05. PLC stands for.....

10.06. EPROM stands for.....

10.07. Version of Programmer used in CSM and Unimat 2S &3S (Old) is.....

10.08. Version of Programmer used in 09-3X and WST is.....

10.09. Input output PCB used in CSM and Unimat 2S is.....

- (a) EK501P (b) EK552P (c) EK554P (d) EK553P

10.10. Input output PCB used in 09-3X and WST is.

- (a) EK653P (b) EK602P (c) EK654P (d) EK553P

10.11. In programmer unit X stands for.

- (a) Input (b) Output (c) Subroutine (d) Time Delay

10.12. In programmer unit Q stands for.....

- (a) Input (b) Output (c) Load Output (d) Time Delay

10.13. In programmer unit inputs are indicated by.....

- (a) Yellow LED (b) Red LED (c) Green LED (d) Blue LED

10.14. In programmer unit outputs are indicated by.....

- (a) Yellow LED (b) Red LED (c) Green LED (d) Blue LED

10.15. How many Inputs are there in EK553P.....

- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos

- 10.16. How many Outputs are there in EK553P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos
- 10.17. In which codes inputs and outputs of EK553P are indicated.....
- (a) Binary (b) Octal (c) Hexadecimal (d) None of these
- 10.18. Load relay PCB in Unimat 2S/3S is.....
- (a) EK502P (b) EK552P (c) EK554P (d) EK654P
- 10.19. Load outputs are indicated by.....
- (a) X (b) Q (c) QL (d) S
- 10.20. How many Outputs are there in EK554P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos
- 10.21. How many LEDs are there in EK554P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos
- 10.22. How many yellow LEDs are there in EK554P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos
- 10.23. How many red LEDs are provided in EK554P.....
- (a) 16Nos (b) 32Nos (c) 64Nos (d) 128Nos
- 10.24. How many relays are provided in EK554P.....
- (a) 6Nos (b) 16Nos (c) 26Nos (d) 36Nos
- 10.25. How many fuses are provided in EK554P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos
- 10.26. Which relay is used in EK554P.....
- (a) ELT 663 (b) ELT7002/S2 (c) ELT1218 (d) ELT7002/S4
- 10.27. Time delay PCB in CSM and Unimat 2S/3S is.....
- (a) EK502P (b) EK552P (c) EK554P (d) EK654P
- 10.28. Time delay outputs are indicated by.....
- (a) X (b) Q (c) QL (d) Q'
- 10.29. How many yellow LEDs are provided in EK552P.....
- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos

10.30. How many red LEDs are provided in EK552P.....

- (a) 2Nos (b) 4Nos (c) 8Nos (d) 16Nos

10.31. How many time delay adjustment potentiometers are provided in EK552P.....

- (a) 18Nos (b) 16Nos (c) 32Nos (d) 8Nos

10.32. How many programmer PCBs are provided in CSM.....

- (a) 1No (b) 2Nos (c) 3Nos (d) 4Nos

10.33. How many EK553P PCBs are provided in CSM.....

- (a) 4No (b) 5Nos (c) 7Nos (d) 9Nos

10.34. How many EK552P PCBs are provided in CSM.....

- (a) 1No (b) 2Nos (c) 3Nos (d) 4Nos

10.35. Which one is subroutine output in CSM.....

- (a) Q01 (b) Q10 (c) Q20 (d) Q30

10.36. Which one is not a subroutine output in CSM.....

- (a) Q01 (b) Q61 (c) Q9F (d) Q11

10.37. In Logic Plan 1X10 stand for.....

10.38. In Logic Plan 2X19 stands for.....

10.39. In Logic Plan 2X4E stands for.....

10.40. In Logic Plan Q10 stands for.....

10.41. In Logic Plan Q20 stands for.....

10.42. In Logic Plan Q35 stands for.....

10.43. In Logic Plan QL20 stands for.....

10.44. In Logic Plan QL26 stands for.....

10.45. In Logic Plan Q80 stands for.....

10.46. In CSM which signal does give programme run indication.....

- (a) Q01 (b) Q1E (c) Q9F (d) X1E

10.47. In logic chart which symbol does show "AND" function

- (a) \vee (b) Σ (c) \wedge (d) $\bar{}$

10.48. In logic chart which symbol does show “OR” function.....

- (a) \vee (b) Σ (c) \wedge (d) $\bar{}$

10.49. In logic chart which symbol does show “Not allowed” function

- (a) \vee (b) Σ (c) \wedge (d) $\bar{}$

10.50. In logic chart signal 11 shows

- (a) X (b) Q (c) QL (d) Q'

10.51. Timing range in time delay PCB is.....

- (a) 1-2 sec (b) .2-3.5 sec (c) .2-3.5 msec (d) 3-5 sec

10.52. QL is controlled by Q.

True/False

10.53. EK 553P can be replaced with EK 653P.

True/False

10.54. All input/output PCBs can be checked at '0' no. port only.

True/False

10.55. CSM has EK 653P PCB.

True/False

Multi-check/ Multiplexer PCB

11.01. Multiplex PCB is used to check.....

- (a) Output of Transducer (b) Output of Potentiometers (c) Input –Output of PCBs (d) All a,b,c

11.02. Multiplex PCB used in CSM, Unimat 2S.....

- (a) EK28V (b) EK16V (c) EK24V (d) EK207V

11.03. No./s of Multiplex PCB used in CSM/Unimat2S/3S/WST.....

- (a) 1 (b) 2 (c) 3 (d) 4

11.04. Multiplex PCB used in Tamping Express 09-3X is

- (a) EK28V (b) EK16V (c) EK24V (d) EK207V

11.05. How many Multiplex PCB used in Tamping Express 09-3X.....

- (a) 1 (b) 2 (c) 3 (d) 4

11.06. Maximum no. of signals can be checked by Multiplex PCB used in CSM.....

- (a) 16 (b) 32 (c) 48 (d) 40

11.07. Maximum no. of signals can be checked by Multiplex PCBs used in 09-3X

- (a) 48 (b) 64 (c) 80 (d) 192

11.08. Multicheck signals are denoted by.....

- (a) X (b) Q (c) QL (d) F

11.09. How many Yellow LEDs are there in a Multiplex PCB

- (a) 8 Nos (b) 16 Nos (c) 32 Nos (d) 64 Nos

11.10. How many Red LEDs are there in a Multiplex PCB

- (a) 2 Nos (b) 4Nos (c) 8Nos (d) 16Nos

11.11. How many Blue switches are there in Multiplex PCB

- (a) 8Nos (b) 16Nos (c) 32Nos (d) 64Nos

11.12. How many Red switches are there in Multiplex PCB

- (a) 2 Nos (b) 3Nos (c) 4Nos (d) 5Nos

11.13. Multiposition selector switch should be kept in which position while checking signal by multicheck PCB.....

- (a) 1st (b) 2nd (c) 3rd (d) 4th

11.14. Multiposition selector switch should be kept in which position while checking signal through digital display

- (a) 1st (b) 2nd (c) 3rd (d) 4th

11.15. Multicheck Address of lining Transducer in CSM is.....

- (a) F01 (b) F02 (c) F03 (d) F04

11.16. Multicheck Address of Measuring Transducer in CSM is.....

- (a) F00 (b) F01 (c) F02 (d) F03

11.17. In multicheck F10 stands for.....

11.18. In multicheck F01 stands for

12.14. In Upper position of Tamping unit what inputs go to programmer in CSM

.....

- (a) X13 & X14 (b) X15 & X16 (c) X17 & X18 (d) X19 & X20

12.15. Which potentiometer is used to set Upper position of Tamping unit

- (a) P1 (b) P5 (c) P9 (d) P11

12.16. In Middle position of Tamping unit which LED glows.....

- (a) Red (b) Green (c) Yellow (d) None of these

12.17. In Middle position of Tamping unit which relay operates.....

- (a) Re6 (b) Re3 (c) Re4 (d) Re5

12.18. In Middle position of Tamping unit what input go to programmer

- (a) X13 & X14 (b) X19 & X1A (c) X17 & X18 (d) X15 & X16

12.19. Which potentiometer is used to set Middle position of Tamping unit

- (a) P4 (b) P5 (c) P9 (d) P11

12.20. Which function starts in Middle position of Tamping unit

- (a) Squeezing (b) Driving (c) lifting & Lining (d) None of These

12.21. Lower position of Tamping unit is setbefore target depth.

- (a) 30mm (b) 60mm (c) 90mm (d) 100mm

12.22. In Lower position of Tamping unit which LED glows.....

- (a) Red (b) Green (c) Yellow (d) None of these

12.23. In Lower position of Tamping unit which relay operates.....

- (a) Re6 (b) Re3 (c) Re4 (d) Re5

12.24. In Lower position of Tamping unit what input go to programmer

- (a) X13 & X14 (b) X15 & X16 (c) X19 & X1A (d) X17 & X18

12.25. Which potentiometer is used to set Lower position of Tamping unit

- (a) P10 (b) P11 (c) P12 (d) P13

12.26. Which function starts in Lower position of Tamping unit

- (a) Lining (b) Driving (c) Lifting (d) Squeezing

- 12.27. Maximum current rating of Proportional valve is.....
- (a) 750mA (b) 600mA (c) 650mA (d) 700mA
- 12.28. In CSM lowering current of proportional valve for Tamping Unit is set.....
- (a) 550mA (b) 600mA (c) 650mA (d) 750mA
- 12.29. In CSM lifting current of proportional valve for Tamping Unit is set.....
- (a) 550mA (b) 600mA (c) 650mA (d) 750mA
- 12.30. In CSM Basic current of proportional valve for Tamping Unit is set.....
- (a) 200mA (b) 400mA (c) 350mA (d) 250mA
- 12.31. In 09-3X lowering current of proportional valve for Tamping Unit is set.....
- (a) 550mA (b) 600mA (c) 650mA (d) 750mA
- 12.32. In Unimat lifting current of proportional valve for Tamping Unit is set.....
- (a) 550mA (b) 600mA (c) 650mA (d) 750mA
- 12.33. Tamping control PCB controls.....
- (a) Tamping depth (b) Lowering speed (c) Lifting speed (d) All a,b,c
- 12.34. Tamping Control PCB in CSM is
- (a) EK28V (b) EK16V (c) EK24V (d) EK207V
- 12.35. How many Tamping control PCB used in CSM.....
- (a) 1 (b) 2 (c) 3 (d) 4
- 12.36. Tamping Control PCB EK16V is used in
- (a) Unomatic (b) Duomatic (c) CSM (d) All a,b,c
- 12.37. Tamping Control PCB EK132V is used in
- (a) Unimat-2S (b) Unimat-3S (old) (c) Unomatic (d) a & b
- 12.38. How many relays are there in PCB EK16V.....
- (a) 2 (b) 4 (c) 6 (d) 8
- 12.39. How many relays are there in PCB EK132V.....
- (a) 6 (b) 8 (c) 10 (d) 12
- 12.40. Which outputs are generated by Programmer for lowering of Tamping unit in CSM & Unimat 2S/3S.....
- (a) Q10 & Q11 (b) Q12 & Q13 (c) Q14 & Q15 (d) Q16 & Q17

12.41. Which relays are operated by output from Programmer for lowering of Tamping unit in EK16V and EK132V.....

- (a) Re5,Re4,Re6 (b) Re1,Re2,Re5 (c) Re5,Re6,Re3 (d) Re3,Re4,Re6

12.42. Which relay is used to operate Proportional Valve in PCB EK16V and EK132V.....

- (a) Re1 (b) Re2, (c) Re3 (d) Re4

12.43. What is the current rating of fuse used in PCB EK16V and EK132V.....

- (a) 1A (b) 2A (c) 3A (d) 4A

12.44. Tamping Control PCB in MPT is

- (a) EK1AP4 (b) EK16V (c) EK176V (d) EK1AP7

12.45. How many Tamping control PCB used in 09-3X.....

- (a) 1 (b) 2 (c) 3 (d) 4

12.46. How many Tamping control PCB used in WST.....

- (a) 1 (b) 2 (c) 3 (d) 4

12.47. How many Tamping control PCB used in MPT.....

- (a) 1 (b) 2 (c) 3 (d) 4

12.48. How many relays are there in PCB EK1AP7.....

- (a) 8 (b) 4 (c) 6 (d) 9

12.49. How many relays are there in PCB EK176V.....

- (a) 6 (b) 9 (c) 10 (d) 12

12.50. Which outputs are generated by Programmer for lowering of Tamping unit in WST....

- (a) Q10 & Q11 (b) Q12 & Q13 (c) Q14 & Q15 (d) Q16 & Q17

12.51. Which relays are operated by output from Programmer for lowering of Tamping unit in EK1AP7 and EK176V.....

- (a) Re5 (b) Re1 (c) ,Re3 (d) Re4

12.52. Which relay is used to operate Proportional Valve in PCB EK1AP7 and EK176V

- (a) Re1 & Re5 (b) Re2 & Re3, (c) Re3&Re4 (d) Re4&Re5

12.53. What is the current rating of fuse used in PCB EK1AP7 and EK176V

- (a) 1A (b) 2A (c) 3A (d) 4A

12.54. Zero depth of Tamping Tools are set..... below rail Head

- (a) 20-25mm (b) 10-15 mm (c) 15-30mm (d) 0-10mm

12.55. Zero depth is adjusted by which potentiometer in tamping control PCB.....

- (a) P1 (b) P2 (c) P3 (d) P4

12.56. Target depth is set by which potentiometer in tamping controls PCBs

- (a) P10 (b) P11 (c) P12 (d) P13

12.57. In which machines there are two Upper cut off positions, Position1(150mm) & Position2(80mm) of Tamping units.....

- (a) 09-3X (b) WST (c) MPT (d) All a, b&c

12.58. Which potentiometer is used to Adjust Upper cut off position(1) of Tamping unit in 09-3X/WST/MPT.....

- (a) P21 (b) P22 (c) P23 (d) P24

12.59. Which potentiometer is used to Adjust Upper cut off position (2) of Tamping unit in 09-3X/WST/MPT.....

- (a) P21 (b) P22 (c) P23 (d) P24

12.60. Middle position of Tamping unit is setbelow center mark in all tamping machines.

- (a) 60mm (b) 100mm (c) 120mm (d) 150mm

12.61. Which potentiometer is used to Adjust Lowering Current in tamping Control PCB in CSM/Duo/WST

- (a) P11 (b) P12 (c) P13 (d) P7

12.62. Which potentiometer is used to Adjust Lowering Current in tamping Control PCB in 09-3X/Unomatic/Uni2S/3S/MPT

- (a) P7 (b) P8 (c) P9 (d) P10

12.63. Which potentiometer is used to Adjust lifting Current in tamping Control PCB in CSM/Duo/WST

- (a) P11 (b) P12 (c) P13 (d) P14

12.64. Which potentiometer is used to Adjust lifting Current in tamping Control PCB in 09-3X/Unomatic/Uni2S/3S/MPT

- (a) P7 (b) P8 (c) P9 (d) P12

12.65. Which potentiometer is used to Adjust Basic Current in tamping Control PCB in all tamping machines.

- (a) P7 (b) P8 (c) P9 (d) P12

12.77. In CSM Input to programmer from Tamping system on switch is.

- (a) X16 (b) X17 (c) X18 (d) X19

12.78. In CSM Input from lining without tamping switch to programmer is.

- (a) X3C (b) X3D (c) X3E (d) X3F

12.79. In CSM Inputs from Limit switches of tamping unit Lock to programmer are.

- (a) X5A & X5B (b) X5C & X5D (c) X5E & X5F (d) X6A & X6B

12.80. Which subroutine output of programmer should be checked if left or right or both tamping units are not coming upwards in CSM. during auto cycle.

- (a) Q0A (b) Q0B (c) Q0C (d) Q0D

12.81. Which subroutine output of programmer should be checked if auto squeezing is not taking place during tamping in CSM?

- (a) Q01 (b) Q02 (c) Q03 (d) Q04

13.29. Part no. of Relays Re1 to Re6 in PCB EK349LV/EK335LV/ EK2038/EK2286LV is.....

- (a) ELT663 (b) ELT277 (c) ELT1218 (d) ELT7045

13.30. Part no. of Relays Re7 in PCB EK349LV/EK335LV/ EK2038/EK2286LV is.....

- (a) ELT663 (b) ELT7002/S4 (c) ELT1218 (d) ELT7045

13.31. How many relays are there in PCB EK2173LV/EK2361LV.....

- (a) 2 (b) 4 (c) 6 (d) 7

13.32. What is the output from programmer for lining in 09-3X.....

- (a) Q115 (b) Q116 (c) Q117 (d) Q118

13.33. Which relays are operated by 3pt.Lining switch in EK2173LV/EK2361LV

- (a) Re1 & Re2 (b) Re1&Re4 (c) Re1, Re3, Re5&Re6 (d) Re4&Re2

13.34. Which relay is operated by datum switch in EK2173LV/EK2361LV

- (a) Re1 (b) Re4 (c) Re3 (d) Re2

13.35. Which relay is operated in automatic lining in EK2140LV....

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

13.36. Which relay is operated in Manual lining left side in EK2140LV.....

- (a) Re2 (b) Re3 (c) Re4 (d) Re5

13.37. Which relay is operated in Manual lining Right side in EK2140LV

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

13.38. Which relay is operated to switch on Overslew in EK2140LV

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

13.39. Maximum current of Servo valve is set.....

- (a) 1.5mA (b) 15mA (c) 150mA (d) 1.5A

13.40. Maximum Voltage of Servo valve is set

- (a) 3 mV (b) 30mV (c) 300mV (d) 3V

13.41. In CSM/WST which potentiometer is used to set maximum current of servo valve in lining PCB.....

- (a) P1 (b) P2 (c) P3 (d) P4

13.42. In CSM/WST which potentiometer is used to set Gain of servo valve in lining PCB.....

- (a) P1 (b) P2 (c) P3 (d) P4

13.43. In CSM/WST which potentiometer is used for electrical “null” adjustment of servo valve in lining PCB.....

- (a) P1 (b) P2 (c) P3 (d) P4

13.44. In 09-3X/Unimat3S which potentiometer is used to set maximum current of servo valve in PCB EK2140LV.....

- (a) P4 (b) P5 (c) P6 (d) P7

13.45. In 09-3X/Unimat3S which potentiometer is used to set Gain of servo valve in PCB EK2140LV.....

- (a) P4 (b) P5 (c) P6 (d) P7

13.46. In 09-3X/Unimat3S which potentiometer is used for electrical “null” adjustment of servo valve in PCB EK2140LV

- (a) P4 (b) P5 (c) P6 (d) P7

13.47. Multicheck Address of lining Transducer in CSM/WST/Unimat2S/3S is.....

- (a) F01 (b) F02 (c) F03 (d) F04

13.48. Multicheck Address of Measuring Transducer in CSM/09-3X/WST/Unimat2S/3S is.....

- (a) F00 (b) F01 (c) F02 (d) F03

13.49. Multicheck Address of lining Transducer in 09-3X is.....

- (a) F00 (b) F02 (c) F03 (d) F04

13.50. Lining & Measuring Transducer convert lining error/versine to electrical signal @.....

- (a) 21.2mv/mm (b) 22.3 mv/mm (c) 23.1mv/mm (d) 25.1mv/mm

13.51. Slew and Versine Potentiometers convert Slew and versine value to electrical signal @.....

- (a) 25mv/mm (b) 50mv/mm (c) 75mv/mm (d) 100mv/mm

13.52. Multicheck address of Versine Potentiometer in CSM/WST/Unimat2S/3S is.....

- (a) F00 (b) F02 (c) F03 (d) F04

13.53. Multicheck address of Slew Potentiometer in CSM/WST/Unimat 2S/3S is.....

- (a) F03
- (b) F04
- (c) F05
- (d) F06

13.54. Versine ratio left side in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P11
- (b) P12
- (c) P13
- (d) P14

13.55. Versine ratio right side in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P11
- (b) P12
- (c) P13
- (d) P14

13.56. Versine ratio left side in Lining PCBs EK2173LV/EK2361LV is adjusted bypotentiometer.

- (a) P3
- (b) P5
- (c) P6
- (d) P7

13.57. Versine ratio right side in Lining PCB EK2173LV/EK2361LV is adjusted bypotentiometer.

- (a) P3
- (b) P5
- (c) P6
- (d) P7

13.58. Lining transducer value(180mm) left side in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P9
- (b) P10
- (c) P11
- (d) P12

13.59. Lining transducer value(180mm) right side in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P9
- (b) P10
- (c) P11
- (d) P12

13.60. Lining transducer value(180mm) left side in Lining PCBs EK2173LV/EK2361LV is adjusted bypotentiometer.

- (a) P1
- (b) P2
- (c) P3
- (d) P4

13.61. Lining transducer value(180mm) right side in Lining PCB EK2173LV/EK2361LV is adjusted bypotentiometer.

- (a) P1
- (b) P2
- (c) P3
- (d) P4

13.62. Lining offset adjustment in 3pt. left side datum in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P5
- (b) P6
- (c) P7
- (d) P8

13.63. Lining offset adjustment in 3pt. right side datum in Lining PCB EK335LV/EK349LV/EK2038LV &EK2286LV is adjusted bypotentiometer.

- (a) P5
- (b) P6
- (c) P7
- (d) P8

13.75. In automatic lining if output from programmer is coming but lining is not taking place, which relay should be checked/replaced in lining PCB in CSM/Unimat2S/WST.

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

13.76. In automatic lining if output from programmer is coming but lining is not taking place, which relay should be checked/replaced in lining PCB in 09-3X/Unimat3S.

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

13.77. If Manual Lining left side is not taking place, which relay should be checked/replaced in lining PCB in CSM/Unimat2S/WST.

- (a) Re5 (b) Re6 (c) Re7 (d) Re8

13.78. If Manual Lining right side is not taking place, which relay should be checked/replaced in lining PCB in CSM/Unimat2S/WST.

- (a) Re5 (b) Re6 (c) Re7 (d) Re8

13.79. If Manual Lining left side is not taking place, which relay should be checked/replaced in lining PCB in 09-3X/Unimat3S.

- (a) Re2 (b) Re3 (c) Re4 (d) Re5

13.80. If Manual Lining right side is not taking place, which relay should be checked/replaced in lining PCB in 09-3X/Unimat3S.

- (a) Re2 (b) Re3 (c) Re4 (d) Re5

13.81. If Bypass valve is not operating which relay should be checked/replaced in lining PCB in CSM/Unimat2S/WST.

- (a) Re5 (b) Re6 (c) Re7 (d) Re8

Front Input Circuit: UNO/DUO/ CSM/3X /Unimat

14.01. Front Input Control PCB in CSM is

- (a) EK349LV (b) EK345LV (c) EK335LV (d) EK2072LV

14.02 .Front Input PCB in 09-3X is

- (a) EK 2343LV (b) EK2072LV (c) EK335LV (d) EK2361LV

14.03. Front Input Control PCB in Unimat 2S /3S is

- a) EK345LV (b) EK2072LV (c) EK335LV (d) EK2343LV

14.04. Slew value/General lift potentiometer generates electrical signal @

- (a) 25mv/mm (b) 30mv/mm (c) 50mv/mm (d) 100mv/mm

14.05. In Design lining F_D value is fed in.....

- (a) Versine Potentiometer (b) Slew Potentiometer
(c) Cant Potentiometer (d) General Lift Potentiometer

14.06. In fourpoint lining versine compensation value (V_m) is fed in.....

- (a) Versine Potentiometer (b) Slew Potentiometer
(c) Cant Potentiometer (d) General Lift Potentiometer

14.07. ALC stands for

14.08. Operating system used in ALC is

14.09 .GVA stands for.....

14.10. Operating system used in GVA was

14.11. Software used in ALC is

14.12. ALC can work in.....and.....mode.

14.13. ALC is provided in.....Cabin.

14.14.. Earlier Laser lining system was provided on.....

14.15. Presently Laser lining system is provided on.....

14.16. LASER Gun trolley is set at a maximum distance of.....m from Front trolley.

14.17. Null adjustment potentiometer for slew value in front input PCB EK345LV is

- (a) P11 (b) P12 (c) P13 (d) P14

14.18. Null adjustment potentiometer for General Lift value in front input PCB EK345LV is

- (a) P1 (b) P2 (c) P3 (d) P4

14.19.Null adjustment potentiometer for Front Pendulam in front input PCB EK345LV is

- (a) P22 (b) P23 (c) P24 (d) P25

14.20.Null adjustment potentiometer for cant value in front input PCB EK345LV is

- (a) P22 (b) P23 (c) P24 (d) P25

14.21.Which relays operated for cant selection in front input PCB EK345LV

- (a) Ree1&Re2 (b) ReRe3 (c) Re4 &Re5 (d) Re Re6

14.22.Null adjustment potentiometer for Front Pendulam in front input PCB EK2072LV is

- (a) P22 (b) P23 (c) P24 (d) P25

14.23.Null adjustment potentiometer for cant value in front input PCB EK2072LV is

- (a) P22 (b) P23 (c) P24 (d) P25

14.24. Which relays operated for cant selection in front input PCB EK2072LV

- (a) Re1&Re2 (b) ReRe3 (c) Re4 &Re5 (d) ReRe6

Leveling & Lifting Control Circuit of UNO/DUO/ CSM/3X /Unimat

15.01. Lifting Control PCB in CSM is

- (a) EK349LV (b) EK347LV (c) EK2041LV (d) EK3069LV

15.02. Lifting Control PCB in 09-3X is

- (a) EK2351LV (b) EK347LV (c) EK2041LV (d) EK3069LV

15.03 Lifting Control PCB in Unomatic/Duomatic is

- (a) EK229LV (b) EK2041LV (c) EK335LV (d) EK3069LV

15.04. Lifting Control PCB in Unimat 2S & 3S is

- a) EK347LV (b) EK2038LV (c) EK2041LV (d) EK2042LV

15.05. Lifting Control PCB in WST is

- (a) EK2286LV (b) EK2361LV (c) EK2042LV (d)
EK2041LV

15.06. Lifting Control PCB in MPT is

- a) EK347LV (b) EK2038LV (c) EK2041LV (d) EK2042LV

15.07. Pendulam control PCB in CSM is

- (a) EK345LV (b) EK346LV (c) EK347LV (d) EK348LV

15.08. Pendulam control PCB in 09-3X is

- (a) EK2351LV (b) EK347LV (c) EK2041LV (d) EK3069LV

15.09. Pendulam control PCB in Unimat 2S &3S, WST , MPT is.....

- a) EK347LV (b) EK2038LV (c) EK2041LV (d) EK2042LV

15.10. How many PCB EK347LV are there in CSM

- (a) 1 (b) 2 (c) 3 (d) 4

15.11. How many relays are there in PCB EK347LV/.....

- (a) 2 (b) 4 (c) 6 (d) 7

15.12. Which relay is operated for Lifting & Lining Unit Manual Down switch in EK347LV?

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

15.13. Which relay is operated for Lifting & Lining Unit Manual Up switch in EK347LV?

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.14 Which relay is operated for Auto Lifting in EK347LV/

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.15. Which relay is operated for Lifting lamp indicator in EK347LV

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.16. What is the current rating of fuse used in PCB EK347LV

(a) 1A (b) 2A (c) 3A (d) 4A

15.17. How many PCB EK346LV in CSM

(a) 1 (b) 2 (c) 3 (d) 4

15.18. How many relays are there in PCB EK346LV/.....

(a) 2 (b) 4 (c) 6 (d) 7

15.19. Relays operated for left side cant by cant switch in EK346LV.....

(a) Re1,Re2,Re4 (b) Re2,Re5,Re3 (c) Re3,Re4,Re5 (d) Re4,Re5,Re6

15.20. Relays operated for settlement compensation in EK346LV.....

(a) Re1, Re2, (b) Re2, Re5 (c) Re3, Re4 (d) Re3, Re6

15.21. How many PCB EK2041LV are used in Unimat 2S/3S/WST

(a) 1 (b) 2 (c) 3 (d) 4

15.22. How many relays are there in PCB EK2041LV

(a) 2 (b) 4 (c) 6 (d) 7

15.23. Which relay is operated for Lifting & Lining Unit Manual Down switch in PCB EK2041LV

(a) Re1 (b) Re2 (c) Re3 (d) Re4

15.24. Which relay is operated for Lifting & Lining Unit Manual Up switch in PCB EK2041LV

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.25 Which relay is operated for Auto Lifting in PCB EK2041LV

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.26. Which relay is operated for Lifting lamp indicator in PCB EK2041LV

(a) Re1 (b) Re4 (c) Re3 (d) Re2

15.27. What is the current rating of fuse used in PCB PCB EK2041LV

(a) 1A (b) 2A (c) 3A (d) 4A

- 15.28. Pendulam Control PCB in Unimat 2S/3S/WST is
(a) EK2041LV (b) EK347LV (c) EK2042LV (d) EK3069LV
- 15.29. How many PCB EK2042LV in Unimat 2S/3S/WST
(a) 1 (b) 2 (c) 3 (d) 4
- 15.30. How many relays are there in PCB EK2042LV
(a) 2 (b) 3 (c) 4 (d) 5
- 15.31. Relays operated for left side cant by cant switch in PCB EK2042LV
(a) Re2 (b) Re3 (c) Re5 (d) Re6
- 15.32. Relays operated for settlement compensation in PCB EK2042LV
(a) Re1,Re2, (b) Re2,Re5 (c) Re3,Re4 (d) Re3,Re6
- 15.33. How many PCB EK3069LV are used in 09-3X
(a) 1 (b) 2 (c) 3 (d) 4
- 15.34. How many relays are there in PCB EK3069LV
(a) 2 (b) 4 (c) 6 (d) 7
- 15.35. Which relay is operated for Lifting & Lining Unit Manual Down switch in EK3069LV
(a) Re1 (b) Re2 (c) Re3 (d) Re4
- 15.36. Which relay is operated for Lifting & Lining Unit Manual Up switch in PCB EK3069LV
(a) Re1 (b) Re4 (c) Re3 (d) Re2
- 15.37. Which relay is operated for Auto Lifting in PCB EK3069LV
(a) Re1 (b) Re4 (c) Re3 (d) Re2
- 15.38. Which relay is operated for Lifting lamp indicator in PCB EK3069LV
(a) Re1 (b) Re4 (c) Re3 (d) Re2
- 15.39. Pendulam Control PCB in 09-3X is
(a) EK2042LV (b) EK346LV (c) EK2041LV (d) EK2351LV
- 15.40. How many PCB EK2351LV in 093X
(a) 1 (b) 2 (c) 3 (d) 4
- 15.41. How many relays are there in PCB EK2351LV
(a) 2 (b) 4 (c) 5 (d) 6
- 15.42. Relays operated for left side cant by cant switch in PCB EK2351LV
(a) Re1,Re2, (b) Re2,Re5,Re3 (c) Re3,Re4,Re5 (d) Re4,Re5,Re6
- 15.43. Relay operated for leveling correction right in PCB EK2351LV
(a) Re1 (b) Re5 (c) Re3 (d) Re6
- 15.44. Micro Controller PCB in 09-3X is
(a) EK526MC (b) EK527MC (c) EK528MC (d) EK529MC

16.27. How many relays are there in Satellite control PCB in 09-3X.....

- (a) 4 (b) 5 (c) 6 (d) 7

16.28. How many Transistors are there in Satellite control PCB in 09-3X.....

- (a) 4 (b) 5 (c) 6 (d) 7

16.29. In 09-3X in front position of satellite , which input goes to programmer from EK202V.....

- (a) X123 (b) X124 (c) X125 (d) X126

16.30. In 09-3X in middle position of satellite , which input goes to programmer from EK202V.....

- (a) X123 (b) X124 (c) X125 (d) X126

16.31. In EK202V, which relays are operated for forward movement of satellite.....

- (a) Re1,Re3 & Re4 (b) Re1 ,Re2& Re3 (c) Re1,Re3&Re5 (d) Re2,Re4 &Re6

16.32. In EK202V,which relay is used to operate propotional valve for forward movement of satellite.....

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

16.33. In EK202V,which relay is used to operate propotional valve for reverse movement of satellite.....

- (a) Re1 (b) Re2 (c) Re3 (d) Re4

16.34. In EK202V,which Op-Amp is used as integrator/Ramp Generator.....

- (a) OP4A (b) OP4B (c) OP4C (d) OP4D

16.35. In place of EK202V.....PCB is used in new 09-3X

- (a) EK1AP7 (b) EK1AP12 (c) EK1AP13 (d) EK203V

16.36. In EK202V,which Op-Amp is used as oscillator/Diether circuit.....

- (a) OP8 (b) OP9 (c) OP7 (d) OP6

16.37. In EK202V,frequency of oscilation of oscillator/Diether circuit

- (a) 100Hz (b) 200Hz (c) 300Hz (d) 400Hz

Work Drive Control Circuit

17.01. Work drive control PCB in CSM

- (a) EK345LVV (b) EK346LV (c) EK24V (d) EK319LV

17.02. Work drive control PCB in 09-3X

- (a) EK2345LV (b) EK2349LV (c) EK24V (d) EK319LV

17.03. How many Work drive PCBs are used in CSM.....

- (a) 1 (b) 2 (c) 3 (d) 4

17.04. How many Work drive PCBs are used in 09-3X.....

- (a) 4 (b) 3 (c) 2 (d) 1

17.05. Encoder PCB in CSM

- (a) ELT 5032 (b) ELT 5033 (c) ELT 5034 (d) ELT 5035

17.06. Variable pump proportional valve amplifier PCB in CSM

- (a) VT 3002 (b) VT3003 (c) VT3004 (d) VT3005

17.07. Encoder converts displacement of machine to digital signal @

- (a) 1000impulse/metre (b) 100 impulse /metre (c) 10 impulse /metre (d) 1 impulse /metre

17.08. Frequency of output signal of Encoder

- (a) 177.7Hz (b) 277.7Hz (c) 377.7Hz (d) 477.7Hz

17.09. In EK319LV, IC1 is a.....

- (a) Inverter (b) Adder
(c) Integrater (d) Frequenvy to voltage converter

17.10. In EK319LV, out put of IC1 is@ 1KMPH.

- (a) 177.7mV (b) 277.7mV (c) 377.7mV (d) 477.7mV

17.11. In EK319LV, out put of IC2B is@ 1KMPH.

- (a) 1V (b) 2V (c) 3V (d) 4V

17.12. In EK2349LV, IC5 ia a.....

- (a) Inverter (b) Adder
(c) Integrater (d) Frequenvy to voltage converter

17.13. In EK2349LV, out put of IC5 is@ 1KMPH.

- (a) 177.7mV (b) 277.7mV (c) 377.7mV (d) 477.7mV

17.14. In EK2349LV, out put of IC3D is@ 3KMPH.

- (a) 1V (b) 2V (c) 3V (d) 4V

17.15. Multicheck address of of output of PCB EK319LV is

- (a) F1A (b) F1B (c) F1C (d) F1D

17.16. Multicheck address of of speed potentiometer is

- (a) F1A (b) F1B (c) F1C (d) F1D

17.17. In EK319LV, if out put of PCB at multicheck F1B is not 1V @ 1KMPH which potentiometer should be adjusted.

- (a) P1 (b) P2 (c) P3 (d) P4

17.18. In EK319LV, if out put of PCB at 24db or26db is not .62V @ 1KMPH which potentiometer should be adjusted.

- (a) P1 (b) P2 (c) P3 (d) P4

17.19. Machine is not moving forward, which output of programmer should be checked in CSM.

- (a) Q08 (b) Q09 (c) Q06 (d) Q07

17.20. Machine is not moving reverse, which output of programmer should be checked in CSM.

- (a) Q08 (b) Q09 (c) Q06 (d) Q07

Hook Control Circuit

18.01. Hooks are used in-

- (a) MPT (b) UNIMAT (c) WST (d) Both (a) & (b)

18.02. Hook control circuit are used-

- (a) To control the movement of clamp (b) To control the depth of hook
(c) To control the depth of Taming Unit (d) None

18.03 Hook can be applied to lift the rail on-

- (a) Rail head only (b) Rail foot only (c) Both (d) None

18.04. Hook control PCB used in UNI-2S is-

- (a) EK132V (b) EK120V (c) EK144V (d) E16V

18.05. Hook control PCB used in UNI-3S is-

- (a) EK132V (b) EK120V (c) EK144V (d) E16V

18.06 Hook transducer converts displacement of hook to electrical signal @ of-

- (a) 25mv/mm (b) 95mv/mm (c) 23.1mv/mm (d) 23mv/mm

18.07 What is the multicheck address of LHS hook transducer-

- (a) F18 (b) F19 (c) F14 (d) F15

18.08. When hook is in up position what voltage should come-

- (a) 1.5V (b) -2.2V (c) +2.2V (d) -1.5V

18.09. What is the multicheck address of hook depth preset LHS-

- (a) F18 (b) F16 (c) F17 (d) F19

18.10. What is the multicheck address of hook depth preset RHS

- (a) F16 (b) F19 (c) F18 (d) F17

18.11. How many No. of hook transducer in UNIMAT-4S

- (a) 2 (b) 3 (c) 1 (d) 4

18.12. When hook transducer output is less than-2V, machine cannot be drive
True/False

18.13. Hook top and bottom position cannot be adjusted by potentiometer.

True/False

18.14. Theoretical depth for rail head is set by-

- (a) 23f1 potentiometer (b) 23f2 potentiometer (c) 23f3 potentiometer (d) 23f4
potentiometer

18.15. Maximum theoretical voltage set for rail head is-

- (a) +2V (b) +3V (c) +5.5V (d) -3V

18.16 Maximum theoretical voltage set for rail foot is-

- (a) +3V (b) -3V (c) +5.5V (d) -5.3V

18.17. Theoretical output for LHS rail head is set by-

- (a) P₈ (b) P₉ (c) P₁₀ (d) P₁₁

- 18.18. Theoretical output for RHS rail head is set by-
 (a) P₈ (b) P₉ (c) P₁₀ (d) P₁₁
- 18.19 Theoretical output for RHS rail foot is set by-
 (a) P₈ (b) P₉ (c) P₁₀ (d) P₁₁
- 18.20. Op-amp OP 1A in PCB EK 144V is-
 (a) Buffer (b) Adder (c) Comparator (d) Sub-tractor
- 18.21. Op-amp OP 2B in PCB EK 120V is-
 (a) Buffer (b) Adder (c) Comparator (d) Sub-tractor
- 18.22. Op-amp OP 3B in PCB EK 120V is-
 (a) Buffer (b) Adder (c) Comparator (d) Sub-tractor
- 18.23. Which one is hook lowering LHS input-
 (a) X40 (b) X41 (c) X42 (d) X43
- 18.24. Which one is hook lifting RHS input-
 (a) X40 (b) X41 (c) X42 (d) X43
- 18.25. Which one is hook lifting LHS output-?
 (a) Q12 (b) Q13 (c) Q14 (d) Q15
- 18.26. Which one is hook lifting RHS output-?
 (a) Q12 (b) Q13 (c) Q14 (d) Q15
- 18.27. What is function of opto-coupler in Hook control circuit-
 (a) To operate MOSFET (b) To operate logic valve (c) both (d) None of these
- 18.28 Input voltage of Op 3D or Op 3C is-
 (a) -2V (b) -10V (c) +10V (d) +2V
- 18.29. During calibration position of hook should be-
 (a) In lower position (b) In middle position (c) In upper position (d) None of these
- 18.30. What subroutine should come for LH Hook down-
 (a) Q01→ X01 (b) Q00→ X00 (c) Q02→ X02 (d) Q03→ X03
- 18.31 What subroutine should come for RH Hook down-
 (a) Q01→ X01 (b) Q00→ X00 (c) Q02→ X02 (d) Q03→ X03
- 18.32. When RH hook is not going outward, what QL output should check-
 (a) QL71 (b) QL72 (c) QL73 (d) QL74
- 18.33. When LH hook is not going outward, what Q_L output should check-
 (a) QL71 (b) QL72 (c) QL73 (d) QL74
- 18.34 When LH hook is not coming inward, what Q_L output should check-
 (a) QL72 (b) QL74 (c) QL75 (d) QL71
- 18.35. When RH hook is not coming inward, what Q_L output should check-
 (a) QL72 (b) QL74 (c) QL71 (d) QL73

18.36. When hook transducer output is zero then what will happen-

- (a) Hook movement will fast
- (b) Hook movement will slow
- (c) Hook movement stop
- (d) None of these-

18.37. When theoretical depth potentiometer will faulty then hook will malfunctioning

True/False

18.38. Top and bottom depth of hook can not be adjusted-

True/False

Answer Sheet No.-01

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
01.01	c	01.10	Out from programmer	01.19	c
01.02	a	01.11	Automatic Guiding computer	01.20	Active component
01.03	a	01.12	Geometric value assessment	01.21	Active component
01.04	c	01.13	T	01.22	T
01.05	c	01.14	T	01.23	F
01.06	c	01.15	F	01.24	T
01.07	Plug in type PCB	01.16	b	01.25	F
01.08	Digital control PCB	01.17	c		
01.09	Input to programmer	01.18	d		

Answer Sheet No.-02

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
02.01	d	02.08	a	02.15	c	02.22	c
02.02	c	02.09	c	02.16	b	02.23	a
02.03	d	02.10	a	02.17	d	02.24	a
02.04	a	02.11	a	02.18	d	02.25	c
02.05	b	02.12	d	02.19	c	02.26	d
02.06	c	02.13	c	02.20	d		
02.07	b	02.14	a	02.21	b		

Answer Sheet No.-03

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
03.01	a	03.17	b	03.33	a
03.02	d	03.18	d	03.34	c
03.03	c	03.19	b	03.35	b
03.04	c	03.20	b	03.36	b
03.05	a	03.21	d	03.37	a
03.06	b	03.22	a	03.38	b
03.07	d	03.23	a	03.39	a
03.08	c	03.24	d	03.40	a
03.09	b	03.25	c	03.41	T
03.10	a	03.26	T	03.42	F
03.11	d	03.27	F	03.43	F
03.12	b	03.28	T	03.44	T
03.13	d	03.29	F	03.45	T
03.14	T	03.30	F		
03.15	F	03.31	c		
03.16	b	03.32	b		

Answer Sheet No.-04

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
04.01	c	04.11	a	04.21	a
04.02	a	04.12	F	04.22	b
04.03	b	04.13	T	04.23	a
04.04	c	04.14	a	04.24	b
04.05	c	04.15	a	04.25	b
04.06	a	04.16	a	04.26	a
04.07	b	04.17	c	04.27	b
04.08	d	04.18	c	04.28	T
04.09	c	04.19	b	04.29	F
04.10	a	04.20	b		

Answer Sheet No.-05

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
05.01	b	05.15	b	05.29	c
05.02	c	05.16	c	05.30	b
05.03	a	05.17	b	05.31	c
05.04	b	05.18	a	05.32	c
05.05	c	05.19	b	05.33	b
05.06	up/down movement of tamping unit	05.20	b	05.34	a
05.07	b	05.21	c	05.35	b
05.08	c	05.22	a	05.36	a
05.09	d	05.23	a	05.37	c
05.10	b	05.24	a	05.38	a
05.11	c	05.25	b	05.39	b
05.12	F	05.26	F	05.40	a
05.13	T	05.27	T	05.41	F
05.14	a	05.28	a	05.42	T

Answer Sheet No.-06

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
06.01	a	06.16	T	06.31	F
06.02	b	06.17	a	06.32	T
06.03	a	06.18	b	06.33	T
06.04	c	06.19	b	06.34	a
06.05	a	06.20	c	06.35	a
06.06	b	06.21	c	06.36	b
06.07	d	06.22	d	06.37	a
06.08	a	06.23	c	06.38	d
06.09	a	06.24	c	06.39	d
06.10	b	06.25	d	06.40	b
06.11	b	06.26	b	06.41	d
06.12	a	06.27	T	06.42	F
06.13	F	06.28	F	06.43	T
06.14	F	06.29	T		
06.15	T	06.30	F		

Answer Sheet No.-07

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
07.01	b	07.16	c	07.31	b
07.02	a	07.17	b	07.32	a
07.03	b	07.18	a	07.33	b
07.04	a	07.19	T	07.34	b
07.05	d	07.20	T	07.35	b
07.06	c	07.21	F	07.36	a
07.07	d	07.22	T	07.37	T
07.08	b	07.23	F	07.38	F
07.09	c	07.24	b	07.39	F
07.10	a	07.25	c	07.40	F
07.11	b	07.26	c	07.41	T
07.12	a	07.27	a	07.42	T
07.13	a	07.28	b	07.43	T
07.14	c	07.29	c		
07.15	a	07.30	c		

Answer Sheet No.-08

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
08.01	d	08.08	b	08.15	T
08.02	d	08.09	b	08.16	F
08.03	c	08.10	c	08.17	T
08.04	c	08.11	a		
08.05	b	08.12	b		
08.06	d	08.13	d		
08.07	a	08.14	a		

Answer Sheet No. -09

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.
09.01	b	09.10	T	09.19	b
09.02	d	09.11	a	09.20	b
09.03	c	09.12	b	09.21	b
09.04	a	09.13	d	09.22	a
09.05	a	09.14	a	09.23	a
09.06	b	09.15	c	09.24	a
09.07	c	09.16	d	09.25	c
09.08	c	09.17	a	09.26	b
09.09	F	09.18	b	09.27	a

Answer sheet No.-10

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
10.01	a	10.20	b	10.37	1 X 1 0 Chechis Input I/O PCB 1 Yellow LED No
10.02	b	10.21	c	10.38	2 X 1 9 PanelNo2 Input I/O PCB 1 Yellow LED No
10.03	c	10.22	b	10.39	2 X 4 E PanelNo2 Input I/O PCB 4 Yellow LED No
10.04	b	10.23	a	10.40	Q 1 0 Output I/O PCB 1 Red LED No
10.05	Programmable Logic controller	10.24	b	10.41	Q 2 0 Output I/O PCB 2 Red LED No
10.06	Erasable Programmable Read Only Memory	10.25	a	10.42	Q 3 5 Output I/O PCB 3 Red LED No
10.07	P500	10.26	d	10.43	QL 2 0 Load output QL PCB 2 Yellow LED No
10.08	P600	10.27	b	10.44	QL 2 6 Load output QL PCB 2 Yellow LED No
10.09	d	10.28	d	10.45	Q' 8 0 Time Delay T.DelayPCB 8 Yellow & Red LED No
10.10	a	10.29	a	10.46	b
10.11	a	10.30	c	10.47	c
10.12	b	10.31	d	10.48	a
10.13	a	10.32	a	10.49	d
10.14	b	10.33	d	10.50	a
10.15	b	10.34	a	10.51	b
10.16	b	10.35	a	10.52	True
10.17	c	10.36	d	10.53	False
10.18	c			10.54	True
10.19	c			10.55	False

Answer sheet No.-11

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
11.01	d	11.07	c	11.13	b
11.02	a	11.08	d	11.14	a
11.03	a	11.09	b	11.15	a
11.04	d	11.10	a	11.16	c
11.05	b	11.11	b	11.17	F 1 0 M. Input Ist Red switch zero Blue Switch
11.06	d	11.12	b	11.18	F 0 1 M. Input Zero Red switch Ist Blue Switch

Answer Sheet No.-12

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
12.01	d	12.28	c	12.55	a
12.02	b	12.29	b	12.56	d
12.03	b	12.30	d	12.57	d
12.04	a	12.31	b	12.58	b
12.05	c	12.32	a	12.59	c
12.06	d	12.33	d	12.60	b
12.07	c	12.34	b	12.61	d
12.08	d	12.35	b	12.62	a
12.09	d	12.36	d	12.63	b
12.10	a	12.37	d	12.64	d
12.11	c	12.38	c	12.65	b
12.12	b	12.39	a	12.66	d
12.13	a	12.40	a	12.67	a
12.14	a	12.41	b	12.68	b
12.15	d	12.42	b	12.69	a
12.16	c	12.43	b	12.70	b
12.17	b	12.44	c	12.71	c
12.18	d	12.45	d	12.72	d
12.19	a	12.46	b	12.73	c
12.20	c	12.47	b	12.74	b
12.21	a	12.48	d	12.75	b
12.22	a	12.49	b	12.76	a
12.23	c	12.50	a	12.77	d
12.24	d	12.51	b	12.78	c
12.25	a	12.52	b	12.79	a
12.26	d	12.53	b	12.80	d
12.27	a	12.54	b	12.81	a

Answer Sheet No.-13

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
13.01	a	13.28	b	13.55	d
13.02	d	13.29	a	13.56	a
13.03	c	13.30	b	13.57	b
13.04	b	13.31	c	13.58	b
13.05	a	13.32	a	13.59	a
13.06	a	13.33	c	13.60	b
13.07	b	13.34	b	13.61	a
13.08	a	13.35	b	13.62	b
13.09	b	13.36	c	13.63	a
13.10	d	13.37	c	13.64	d
13.11	a	13.38	a	13.65	c
13.12	d	13.39	b	13.66	c
13.13	a	13.40	a	13.67	d
13.14	a	13.41	a	13.68	a
13.15	c	13.42	b	13.69	b
13.16	a	13.43	c	13.70	a

13.17	b	13.44	c	13.71	a
13.18	c	13.45	b	13.72	a
13.19	b	13.46	a	13.73	c
13.20	b	13.47	a	13.74	a
13.21	d	13.48	c	13.75	d
13.22	a	13.49	a	13.76	b
13.23	a	13.50	c	13.77	a
13.24	c	13.51	b	13.78	b
13.25	a	13.52	a	13.79	c
13.26	b	13.53	d	13.80	b
13.27	c	13.54	c	13.81	c

Answer Sheet No.-14

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
14.01	b	14.09	Geometric Value Assessment	14.17	c
14.02	a	14.10	DOS	14.18	a
14.03	b	14.11	WinALC	14.19	d
14.04	c	14.12	Geometry & Measuring Run Mode	14.20	b
14.05	b	14.13	Front Cabin	14.21	c
14.06	a	14.14	CSM	14.22	d
14.07	Automatic Guiding Computer	14.15	09-3X	14.23	b
14.08	Windows 95, 98,2000	14.16	300m	14.24	c

Answer Sheet No.-15

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
15.01	b	15.21	b	15.41	c
15.02	d	15.22	b	15.42	a
15.03	a	15.23	d	15.43	b
15.04	c	15.24	c	15.44	a
15.05	d	15.25	d	15.45	a
15.06	c	15.26	a	15.46	b
15.07	b	15.27	c	15.47	d
15.08	a	15.28	c	15.48	c
15.09	d	15.29	a	15.49	b
15.10	b	15.30	b	15.50	a
15.11	b	15.31	a	15.51	d
15.12	d	15.32	d	15.52	a
15.13	c	15.33	b	15.53	a
15.14	d	15.34	b	15.54	b
15.15	a	15.35	d	15.55	c
15.16	c	15.36	c	15.56	d
15.17	a	15.37	d	15.57	d
15.18	c	15.38	a	15.58	a

15.19	a	15.39	d		
15.20	d	15.40	a		

Answer Sheet No.16

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
16.01	c	16.19	b	16.37	a
16.02	d	16.20	a	16.38	a
16.03	a	16.21	b	16.39	d
16.04	d	16.22	c	16.40	b
16.05	c	16.23	b	16.41	d
16.06	a	16.24	b	16.42	d
16.07	c	16.25	a	16.43	b
16.08	d	16.26	a	16.44	a
16.09	a	16.27	d	16.45	a
16.10	c	16.28	b	16.46	d
16.11	a	16.29	c	16.47	d
16.12	a	16.30	b	16.48	c
16.13	c	16.31	c	16.49	a
16.14	b	16.32	c	16.50	d
16.15	c	16.33	b	16.51	c
16.16	d	16.34	b	16.52	b
16.17	d	16.35	b	16.53	b
16.18	b	16.36	d	16.54	a

Answer Sheet No.-17

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
17.01	d	17.08	b	17.15	b
17.02	b	17.09	d	17.16	c
17.03	a	17.10	b	17.17	a
17.04	d	17.11	a	17.18	c
17.05	c	17.12	d	17.19	a
17.06	d	17.13	b	17.20	b
17.07	a	17.14	b		

Answer Sheet No.18

Q. No.	Answer	Q. No.	Answer	Q. No.	Answer
18.01	d	18.15	b	18.29	c
18.02	b	18.16	c	18.30	b
18.03	c	18.17	a	18.31	a
18.04	c	18.18	c	18.32	b
18.05	b	18.19	d	18.33	d
18.06	d	18.20	a	18.34	c
18.07	a	18.21	c	18.35	d
18.08	b	18.22	c	18.36	c
18.09	b	18.23	a	18.37	T
18.10	d	18.24	d	18.38	F
18.11	a	18.25	a		

18.12	T	18.26	c		
18.13	F	18.27	a		
18.14	a	18.28	b		

Answer Sheet No.-19

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
19.01	c	19.05	b	19.09	c
19.02	d	19.06	d	19.10	c
19.03	b	19.07	b	19.11	d
19.04	d	19.08	a	19.12	d