

Objective Questions(Digital Electronics)

1. A digital quantity is one which represents only some _____ values.
2. An analogue quantity is one which represents _____ values.
3. Toggle switch is equivalent to _____.
4. Staircase and Ramp are examples of _____ and _____ quantities respectively.
5. _____ method is used for converting decimal values into binary.
6. The range of values that can be represented by 1's complement method is _____.
7. In 2's complement method the range of values covered is _____.

8. OR gate is one of the _____ gates.
9. NOR gate is called _____ gate.
10. Logic of EX-OR gate is _____ parity.
11. The logic gate which inverts its input is _____.
12. NAND is equivalent to a _____ gate plus a _____ gate.

11. Decoder function is to select _____ when a binary input is applied.
12. One application of Decoder is _____.
13. A Full Adder adds _____ bits at a time.
14. Multiplexer has _____ inputs and _____ output.
15. The selection logic in multiplexer is provided by a _____.

16. A Flip Flop is a _____ device.
17. Meaning of S and R in SR Flip Flop is _____ and _____.
18. Use of D flip flop is for _____.
19. T flip flop is mainly used for constructing _____.
20. Which one of the flip flops can be called as a Universal flip flop. _____.

21. A counter is made up of _____ flip flops.
22. Generally, for constructing down counters _____ triggered flip flops are used.
23. Registers are mainly of _____ types.
24. Registers are constructed using _____ flip flops only.
25. Among Ripple and Synchronous counters which one is faster?
_____.

26. Memory is mainly divided into _____ types.
27. ROM is called _____ memory.
28. Actually RAM should be called as _____ memory.
29. Main disadvantage of EEPROM is _____.
30. Among all types of ROM which one you think as the best? _____.

31. One application of Codes in digital systems is to _____.
32. BCD is mainly used for _____.
33. Gray was first developed for using with _____.
34. ASCII expansion is _____.
35. Unicode is a _____ bit code.
36. Mention the names of two popular logic families. _____.
37. HTL is used in _____ environments.
38. In the design of TTL devices _____ transistors are used.
39. Max. Sink current of TTL devices is _____.
40. _____ logic devices consume very low current.

Objective(Passive devices and basic circuits):

1. Any device, which provides impedance matching between certain circuits and isolation

- between other circuits, may be referred as _____
2. The working principle of Transformer is _____
 3. In a transformer $V_2/V_1 = I_1/I_2 =$ _____
 4. If $N_p > N_s$, where N_p is the no. of turns on primary side and N_s is the no. of turns on the secondary side in a transformer then it is a _____ transformer.
 5. The device, which passes the signal between adjacent arms and provides isolation between opposite arms, is called _____.
 6. A filter is a reactive network that freely passes the desired bands of frequencies while almost _____ all other bands.
 8. The mechanical filter is a _____ device, which receives electrical energy, converts it into mechanical vibration and then converts the mechanical energy back into electrical oscillations at the output.
 9. Surface acoustic wave (SAW) is an electromagnetic wave that travels along the surface of a _____.
 10. Ceramic filter has _____ characteristics at 455/500 KHz.
 11. Passive attenuation equalizers are networks of _____, and resistors
 12. Simple equalizers have the advantage that their _____ changes with frequency.
 13. Active attenuation equalizers, which consist of passive equalizing networks in association with _____
 14. Active attenuation equalizers are usually called "equalizing amplifiers" or "_____".
 15. The equalizers are designed to correct for _____ produced by an open wire transmission line.
 16. The attenuation equalizer attenuates the _____ more than the higher frequencies.
 17. Delay distortion occurs when the component frequencies of a complex wave travel at _____ velocities through transmission lines and equipment.
 18. _____ between sub-units or modules, are needed for making measurements and conducting tests on the system.
 19. RF and microwave connectors are _____ parts so care is needed while handling them.
 20. Two of the most common connectors used for professional audio are 3-3-pin XLR and 21.5mm jacks are used with _____
 22. RCA connector is used with _____
 23. The mono jack has a tip and _____
 24. _____ are waveguide junctions, which play an important part in waveguide.
 25. MAGIC TEE is a combination of _____ and _____ 'T' junctions.
 26. The Filters used in Microwave equipment, namely, band pass filters consist of a number of sections constituting _____ and _____.
 27. _____ to _____ adaptor is used to provide transmission from rectangular waveguide to coaxial connectors.
 28. Waveguide Terminations are also used as _____.

Fill in the blanks:

Objective (Applied Electronics)

1. A narrow band amplifier has a pass band nearly _____.
2. Single stage transformer coupled class A amplifier is delivering the a.c. power to the load of 1.25 watts. The D.C. supply power is _____.
3. Tuned voltage amplifiers are not used in _____.
4. A signal containing frequency component from 445 kHz to 465 KHz is to be amplified, the type of the amplifier suitable for this purpose is _____.

5. The common mode gain for an ideal balanced differential amplifier is _____.
6. Class B amplifier has less efficient compared to _____.
7. The plot that can directly used to determine β is _____.
8. An amplifier has a gain of 1000 +/-10. Negative feed back is provided such that the gain variation is with in 0.1%. The amount of feed back βr is _____.
9. The amplifier configuration which yields the largest power gain of all transistor amplifier configurations is _____.
10. High power efficiency of the pull amplifier is due to _____.
11. The configuration preferred for high input and low output impedance is _____.
12. The DC component is blocked by _____ in a resistance loaded, RC coupled amplifier.
13. The gain band width product of the two stage CE amplifier is _____.
14. If the voltage gain of an amplifier is 400 and its output is 4V then the input voltage should be _____.
15. In the negative feed back amplifier, the output impedance is decreased if the feed back signal is a _____.
16. Positive feedback is the same as _____.
17. The power gain of an emitter follower is usually _____.
18. If the amount of feedback applied to an amplifier reduces the gain by a factor of 10. Then the bandwidth _____.
19. If the amplifier's power is changed from 10 watts to 20 watts. The equivalent dB gain will be _____.

Amplifiers

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20. A major advantage of an emitter follower is that it provides _____.
21. Decibel is defined in terms of _____.
22. The transistor configuration that is normally used in cascading is _____.
23. The circuit that can operate class AB for audio power output is _____.
24. The class of the amplifier that has lowest efficiency is _____.
25. _____ is the fastest switching device.
26. The effect of introducing R_e in the CE amplifier is to _____.
27. In a two stage amplifier, if the voltage gain of the first stage is 100 and of the second stage is 5, then the overall gain will be _____.
28. Common base configuration is little used because it _____.
29. If $I_E = 300\text{mA}$ for 1V emitter bias then R_E is _____.
30. The type of amplifier that can correspond to a half wave rectifier (for voltage wave form) is _____.
31. Common emitter transistor has _____.
32. If the power gain of an amplifier is 40 and its voltage gain is 200, then the current gain will be _____.
33. The number of cascaded stages of CE amplifier required for polarity inversion of the input signal are _____.

Objective:

1. The four sections of regulated DC power supply are _____.
2. The ripple factor of a half wave rectifier is _____.
3. The efficiency of the half wave rectifier is _____.
4. The peak inverse voltage across the non conducting diode in the centre tapped transformer full wave rectifier is _____.

5. The ripple factor of a full wave rectifier _____.
6. The efficiency of the full wave rectifier is _____.
7. The most widely used rectifier is _____.
8. The _____ filter circuit results in the best filtering action.
9. A Zener diode is used as _____.
10. In a half wave rectifier, the output wave form frequency would be _____ the input.
11. In a full wave rectifier, the output wave form frequency would be _____ as the input.
12. No. of diodes in a centre tapped full wave rectifier is _____.

Objective:

1. An oscillator is a circuit that converts _____.
2. An oscillator employs _____ feedback.
3. According to "Barkhausen Criterion" the voltage gain around the amplifier and the feedback loop, called the loop gain must be _____.
4. The phase shift between the input voltage and the feedback voltage, called the loop phase shift must be _____.
5. Hartley oscillator is commonly used in _____.
6. In a phase shift oscillator we use _____ nos. of RC sections.
7. The tank circuit of colpitts oscillator consists of _____ numbers of capacitors.
8. In the tuned collector oscillator, the collector load consists of a _____.
9. In LC oscillators the frequency of oscillation is given by _____.
10. An unusually high degree of frequency stability is achieved by using _____ oscillators.

Objective:

1. Operational Amplifier is a _____ amplifier.
2. The operational amplifier consists of _____ stages.
3. The input stage of an operational amplifier has _____ impedance, High _____, band width and low _____.
4. The intermediate stage of an operational amplifier is designed for high _____ gain.
5. The intermediate stage consists of one or more _____ followed by an _____.
6. The output stage of an operational amplifier has a _____ impedance.
7. Output terminal voltage is zero when the differential input is _____.
8. The operational amplifier has the inputs, they are _____ and _____.
9. The common mode rejection ratio (CMRR) is the ratio of _____ to _____.
10. Importance of CMRR is the ability of a differential amplifier to reject the _____.

Objective (Modulation techniques)

1. _____ is the process in which the amplitude, frequency or phase of the carrier is changed in accordance with the instantaneous value the modulating signal.
2. The modulation index (k) in for an A.M Wave is given by $k = \frac{m}{1+m}$.
3. Total power in a modulated wave depends on _____.
4. The process of recovering from a modulated wave a voltage or current that varies in _____.

accordance with the modulation present on the wave is called _____

Objective:

1. The modulation index, in F.M defined as _____ .
2. It is possible to reduce noise by increasing _____ in F.M.
3. Boosting of higher modulating frequencies in according with a pre-arranged curve is called _____ .
4. _____ is used for Indirect generation of F.M
5. The _____ discriminator is used in FM trans-receivers, wide band and narrow band, and in satellite Radio Receivers for Cable TV etc., as it maintains better linearity though costly.

Objective:

ASK is no longer used in digital communication systems due to ----- problems. (Noise)
FSK signaling schemes are used mainly for -----speed digital data transmissions. (Low)
The output spectrum from a BPSK modulator is simply a -----sideband suppressed carrier (Double)

----- represents the possible symbols that may be selected by a given modulation

scheme as points in the complex plane.(constellation diagram)

----- has four different phase states (45°, 135°, 225°, & 315°). (OQPSK)

In QPSK, the data bits to be modulated are grouped into symbols, each containing ----- bits also called -----(Two, Dibit)

In Offset QPSK the bit waveform on the I and Q channels are offset or shifted in phase from each other by ----- of a bit time (one half)

Eight Phase PSK (8PSK) is an M- ary encoding technique where M = ----- (8)

Quadrature amplitude modulation (QAM) is a form of digital modulation where the digital information is contained in both the -----of the transmitted carrier.(amplitude and phase)

By selecting a higher order format of-----modulation, the data rate of a link can be increased.(QAM)

GMSK modulation is also known as ----- (continuous phase scheme).

Objective(Microprocessor):

- 1) A microprocessor is a _____ logic device.
- 2) Which one of microprocessor buses is not a bi-directional bus _____.
- 3) ALU performs _____ function.
- 4) The register which mediates between the microprocessor and an external I/O device is _____.

5) Status indicators in microprocessors are called as _____.

6) Function of program counter is _____.

7) SP is used to create _____ memory.

8) The supervisory block in a microprocessor is _____.

9) Power of a microprocessor depends upon _____.

10) The word length of Pentium is _____.

Objective:

- 1) Bit size of 8085 _____.
- 2) No. of flags in 8085 _____.
- 3) Sign flag is affected by _____ of the result.
- 4) No. of interruption in 8085 _____.
- 5) Maximum No. of I/O ports that the 8085 can handle _____.
- 6) I/O addressing in 8085 is _____ bit.
- 7) Memory pointer in 8085 _____.
- 8) Address bus of 8085 is _____.
- 9) Function instruction CMC _____.
- 10) After executing PUSH the value in SP _____.
- 11) Registers in 8080 can be used in bit sizes of _____.
- 12) The special pointer registers in 8080 _____.

- 13) The equivalent of MOV in Z80 is _____.
- 14) Among 8085 and Z80, which one do you think is more powerful _____.
- 15) Features of which 8 bit processor are used in 8086 _____.

Objective:

- 1) No. of pins on 8086 _____.
- 2) The architecture of 8086 is popularly known as _____.
- 3) Bit size of 8086 _____.
- 4) Total memory capacity of 8086 _____.
- 5) Variant of 8086 is _____.
- 6) Instruction Byte Queue of 8088 is _____.
- 7) Main difference between 8086 and 8088 is _____.
- 8) No. of base registers in 8086 _____.
- 9) No. of index registers in 8086 _____.
- 10) Which register of 8086 is in counter _____.
- 11) The register equipment to PC _____.
- 12) No. of processing units in 8086 _____.
- 13) Total no. of flags _____.
- 14) No. of status flags _____.
- 15) No. of coastal flags _____.
- 16) 20 bit physical address is generated by _____ technique.
- 17) The segment register used with IP _____.

Objective:

- 1) 8-Bit accumulator in 8086 _____.
- 2) Mention an instruction using direct addressing _____.
- 3) Name an instruction using register addressing _____.
- 4) Examples of Indexed addressing _____.
- 5) R/M field specifies _____.
- 6) The second Opcode in an instruction is called as _____.
- 7) No. of privilege levels in 68000 _____.
- 8) Execution table in 68000 is used for _____.
- 9) Special flag available in 68000 is _____.
- 10) Bit size of data register in 68000 _____.

Objective:

- 1) Base of binary number system is _____.
- 2) Nibble means _____ bits.
- 3) Word bit length is _____ bytes.
- 4) Double word means _____.
- 5) Base of hexadecimal system is _____.
- 6) Convert binary 110011 into decimal. _____.
- 7) Binary equivalent of decimal value 78 _____.
- 8) 45h equivalent to _____ in decimal.
- 9) Mention in decimal form, the values covered in 8 bit signed representation _____.
- 10) The octal number 56 is equivalent to _____ in decimal.

Objective(Public address System):

1. Sound intensity is expressed in watts/cm² (T/ F)
2. In a spherical sound field the sound pressure decreases with the square of the distance from the sound field. (T/F)
3. The sound pressure is constant in any plane perpendicular to the direction of propagation. (T/F)
4. The lowest acoustic pressure that gives rise to a sensation of hearing is called threshold of audibility (T/ F)
5. The highest pressure to which the ear can respond without experiencing pain is called

threshold of pain. (T/ F)

6. Sound pressure and sound pressure level are analogous to voltage and voltage level in the

field of electricity. (T/ F)

7. Acoustic impedance of a sound medium is the complex quotient of the sound pressure and

the particle velocity multiplied by the unit of the area. (T/ F)

8. Threshold of pain is 140 db (T/ F)

9. Threshold of hearing is 20 db. (T/ F)

10. VU meters are called as audio meters (T/ F)

Objective:

1. Pressure operated microphones employ a diaphragm with only one surface exposed to the

sound source. (T/ F)

2. A velocity microphone is one in which the electrical output substantially corresponds to the instantaneous particle velocity in the addressed sound wave. (T/ F)

3 The velocity-operated microphones are ribbon mics (T/ F)

4. The pressure-operated microphones are carbon, crystal, dynamic and capacitor. (T/ F)

5. Dynamic microphone do not employ output transformers (T/ F)

6. The output impedance of a dynamic microphone is approximately 20 Ohms (T/ F)

7. Capacitive microphones are high impedance microphones (T/ F)

8. Capacitive microphones requires polarizing voltage (T/ F)

9. Sensitivity is the amount of voltage developed or generated by the microphone for an applied sound pressure at a test frequency of 1000 Hz (T/ F)

10. Frequency Response is the ability of a microphone to produce a proportionate output to the sound pressure applied for the specified range of frequencies. (T/ F).

Objective:

1. The function of the loudspeaker is to convert electrical energy into acoustic energy. (T/ F)

2. Cone type of loud speaker is a direct radiator (T/ F)

3. Horn-type loud speaker is an indirect radiator (T/ F)

4. High fidelity (hi-fi) speakers are used to reproduce the frequency range of 50 Hz to 12 KHz .

(T/ F)

5. limited frequency use can be prevented through a multiple speaker system comprising separate speakers (T/F).

Objective:

1. An amplifier in PA equipment is a device, which takes low level input signal and amplifies to

a high level output signal to the desired output power. (T/ F)

2. Bass is a low frequency control (T/ F)

3. Treble is a high frequency control (T/ F)

4. No battery current is consumed when the amplifier is working on AC mains. (T/ F)

5. For the connection of loudspeakers in voltage matching method, three terminal strips are provided viz, com. ,100V and 70V (T/ F)

6. For the connection of loudspeakers in impedance matching method, four terminal strips are

provided viz., com., 4_, 8 _ and 16_ (T/ F)

7. Amplifiers are rated at some specified output in watts with a declared harmonic content, of say, 5%. (T/ F)

8. PAN control routes the channel to either left or right output (T/ F).

Objective:

1. The mean level of sound pressure shall be 5 to 15dB above the noise level. (T/ F)

2. The frequency response for the entire system should be within + 3 dB from 100 Hz to 10 KHz. (T/ F)

3. The total harmonic distortion of the entire system shall not exceed 5% at the rated power output of the amplifier. (T/ F)
4. The signal to noise ratio under normal operating conditions of the amplifying systems shall not be worse than 50 dB. (T/ F)
5. In the normal operating conditions sound pressure level is 70 to 80 dB (T/ F)
6. The sound reflection reaching a listener ear at least 1/ 15 th of a second after the original sound is termed as echo (T/ F)
7. Reverberation is an accumulation of echoes (T/ F)
8. The system of calling or summoning the individuals or the general public is called "paging".
(T/ F)
9. The system, which facilitates to talk back to the caller by the individual, is called, paging and talk back. (T/ F).

Objective:

1. The effective impedance of the load should be matched with the output impedance of the amplifier (T/ F)
2. Line matching transformers (LMT) are being used in voltage matching method. (T/F)
3. The power transfer is maximum in impedance matching. (T/F).

Objective(Passenger Information system):

1. Touch screen systems are interactive information systems. (T/F)
2. CCTVs are non interactive information systems. (T/F)
3. Display boards are interactive information systems. (T/F)
4. IVRS is an interactive information system. (T/F)
5. Call center is an interactive information system. (T/F)

Objective:

1. Touchscreen will have touch response (T/F)
2. Touch screens are used as input device (T/F)
3. The touch sensor generally has an electrical current or signal going through it and touching the screen causes a voltage or signal change (T/F)
4. The voltage change is used to determine the location of the touch to the screen. (T/F)
5. The controller is a small PC card that connects between the touch sensor and the PC.
(T/F)
6. Digital video recorder (DVR) provides interface to I/O devices in surveillance system.
(T/F)
7. DVR can accommodate 32 cameras maximum. (T/F)
8. Network video recorder will be used in IP based surveillance system. (T/F)

Objective:

1. The Train Indicator System comprise of operating console unit (PC Based) along with Single line Single/Double face LED display boards. (T/F)
2. Multiple lines Single or Double Face Train Indicator Board on Concourse is made up of 16 X 16 LED matrix of 5 mm LEDs. (T/F)
3. All Display Boards should be given unique identification code/address (T/F)
4. A Display Board is a Microprocessor based System with LEDs arranged in a combination of rows and columns (Matrix) (T/F)
4. The communication exchange acts as interfacing equipment between the computer & display systems (T/F)
5. The information from the computer console to the display boards is routed through the communication exchange. (T/F)

Objective:

1. The system is integrated with the PRS and NTES data base (T/F)
2. IVR runs on Dialogic (Digital and analog) boards (T/F)

3. The IVRS must support various means of Alarm indications in case of System failure (T/F)
4. IVRS can handle simultaneous THIRTY calls in one system (T/F)
5. IVRS will generate report analysis (T/F)
6. IVRS will have built in self diagnostic system (T/F)
7. Call center is a Single window for the Various Customer Service applications (T/F)
8. Call center has FAX on demand facility (T/F)
9. Customers can access to call center through E-mail (T/F)

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Objective:

1. Data synchronization between two operator consoles is through a LAN link (T/F)
2. Main Data Communication HUB should be of multi port serial communication (T/F)
3. The switching will be done by the Main HUB (MDCH) (T/F)
4. MDCH will route the incoming signals to the destinations (T/F)
5. The serial port connection to the coach guidance display boards along a line will be daisy chained (T/F)
6. All communications in IPS will be of optically isolated communication type (T/F)
7. All display boards has to follow a uniform protocol (T/F).

Objective(Power plant practice):

- 1) Lead Acid cell can be discharged up to voltage of _____.
- 2) Function of separators in Lead acid cell is _____.
- 3) Capacity of any Lead Acid cell is given in _____.
- 4) Active material on positive plates of a fully charged Lead Acid cell is _____.
- 5) The IS specification of battery graded concentrated Sulphuric Acid is _____.
- 6) The material used for grids in maintenance free Lead Acid battery is _____.
- 7) I.R.S. Specification number of SMF lead acid batteries is _____.
- 8) To avoid lead corrosion on battery connectors and terminals apply _____.
- 9) Internal short circuit in a cell is indicated by gassing _____.
- 10) Loss of capacity shall not exceed _____% of the initial capacity.
- 11) Batteries should be installed on _____ stands.
- 12) Never add _____ to _____ during preparation of electrolyte.
- 13) No acid fumes are evolved in case of _____ type Lead Acid battery.
- 14) Specific gravity correction factor per 1°C is _____.
- 15) In VRLA cell/battery the compensation of distilled water is by _____ principle.

Objective:

Fill up the blanks with suitable words:

- 1) During Initial charging add only _____.
- 2) Rate of Trickle charging is _____.
- 3) _____ method is used to charge VRLA battery.
- 4) Maximum electrolyte temperature allowed during charging is _____.
- 5) Per cell voltage in case Boost charging is _____ V.
- 6) _____ indicates the fully charged condition of Lead Acid battery.

Fill up the blanks with suitable words:

- 1) In Automatic Battery charger the output controlling device is _____.
- 2) Recommended current rating of charger for an 120AH battery with maximum permissible load of 12 Amps is _____.
- 3) Ripple in D.C. output of battery charger should be less than _____.
- 4) In Automatic battery charger the gate pulses for SCR's is generated by _____.
- 5) Battery reverse protection is provided in by _____ module.
- 6) While operating the Automatic battery charger IRS-S-86/2000, the DC output voltage in float mode to be adjusted without connecting _____.
- 7) The efficiency of Linear type battery charger is _____ than a SMPS battery charger.

- 8) The MTBF of a SMR module shall not be less than _____ hours.
- 9) An 25A to 50A ,SMPS battery charger shall have _____ of FR/FC modules of each _____ Amps.
- 10) The DC-DC converter is located in _____ in SMPS battery charger.

Fill up the blanks with suitable words:

- 1) I.S. Specification number of sealed cylindrical Ni- Cd Cells is _____.
- 2) Voltage of a fully charged Nickle Cadmium cell is _____.
- 3) The active material on +ve plates in Ni-Cd cell is _____.
- 4) In Ni-Cd cell the plate grids are made from _____ process.
- 5) Recommended type of charging for sealed cylindrical nickel cadmium cells is _____.
- 6) The electrolyte used in case of nickel cadmium cell is _____.
- 7) The end point voltage of Ni-Cd cell is _____.
- 8) The Nickle cadmium cell is can be charged with _____ rate of current.
- 9) When Ni- Cd cell is discharged the Cadmium Hydroxide is reduced to _____.
- 10) In Ni-Cd cell the plate grids are made from _____ process.

Objective:

Fill up the blanks with suitable words:

- 1) Efficiency range of an inverter should be more than _____ %
- 2) Output frequency of inverter should be _____
- 3) The power amplifier stage in inverter uses _____ as power amplifier device.
- 4) The changeover time to inverter during Mains power failure is in _____.
- 5) The maximum working temperature of D.C to D.C converters shall be _____.
- 6) The switching frequency of D.C to D.C converter shall be more than _____.
- 7) The oscillator frequency is 500 watts inverter is _____.
- 8) In D.C to D.C converters, the ripple and noise in the output shall be less than _____ mA.
- 9) The backup time of an inverter increases with battery _____.
- 10) _____ is connected on the output side of the inverter.

Objective:

- 1) In case of Ferro resonant type voltage stabilizer short circuit protection is achieved by _____ winding.
- 2) In Ferro resonant voltage regulator the core is made from _____ & _____.
- 3) The operating frequency of Ferro resonant voltage regulator is _____.
- 4) In Ferro resonant voltage regulator the secondary is tuned to parallel resonance at _____.
- 5) The voltage rating of resonant capacitors in Ferro resonant automatic regulator is _____.
- 6) In Ferro resonant automatic regulator the compensate winding is wound on _____ winding.
- 7) In Ferro resonant type automatic voltage stabilizer, the harmonic distortion in the output voltage is maximum at _____.
- 8) The accuracy of stabilizing action of voltage stabilizer can be within ____%.
- 9) After saturation of secondary, in Ferro resonant voltage regulator, the flux passes through _____.
- 10) In electromagnetic stabilizer the stabilization is produced by _____ & _____.

Objective:

Fill up the blanks with suitable words:

- 1) The regulation in series regulator is achieved by voltage across _____.
- 2) The regulation in shunt regulator is achieved by current through _____.
- 3) In Emitter follower regulator, the regulation is done by _____.
- 4) Switched regulator draws _____ power.
- 5) The regulator without feedback voltage is called as _____.
- 6) Transistor emitter follower is _____ type regulator.

- 7) The type of regulator used in SMPS power plant is _____.
- 8) By connecting Zener diodes in cascade to reduce the wide variation in _____.
- 9) In regulator reference voltage is maintained constant by _____.
- 10) In D.C. voltage regulators, the feedback fraction of output voltage and the fixed reference voltage are compared by _____.

Fill up the blanks with suitable words:

- 1) _____ type of batteries are preferred in UPS.
- 2) Input to an UPS is _____.
- 3) The switching time in On-Line UPS is _____ Seconds.
- 4) Back up time of UPS can be increased by increasing _____ & _____.
- 5) The number of transformers required in line interactive UPS are _____.
- 6) The number of transformers required in Off-Line UPS are _____.
- 7) The Off- Line UPS switches on only when _____.
- 8) The _____ will be in OFF condition when mains A.C. supply is ON in Off-Line UPS.
- 9) The amount of noise will depend on the _____ of device used in the inverter section of UPS.

Objective:

Fill up the blanks with suitable words:

- 1) Solar cell converts _____ into _____ energy.
- 2) Voltage of each solar cell is _____.
- 3) Solar cells are made from _____ materials.
- 4) Maximum efficiency of a Silicon solar cell is _____ only.
- 5) Solar cells are to be connected in _____ & _____ fashion to voltage more voltage and current.
- 6) Falling of dust, dirt and snow, decreases the Solar arrays _____.
- 7) Solar cell operates on _____ principle.
- 8) The electric current is generated from a solar cell by the movement of _____ & _____.

Objective (Telephone Exchange Principal and Telephone Instrument):

True/False

1. Switching: Signalling and Controlling are the main functions of Exchange. (T/F)
2. Two Subscribers of two different Exchanges are connected through Trunk Switching. (T/F)
3. Loop Signalling is extended from Subscriber to Exchange. (T/F)
4. Stored Program Control has over all control on the Exchange. (T/F)
5. MDF is meant for connecting indoor and outdoor cable pairs. (T/F)
6. Protective devices are used on MDF for protecting the Exchange SLC/TRK cards from damage. (T/F)
7. Copper wires are used for transmission due to less attenuation & less distortion. (T/F)
8. A Trunk line uses 3 pairs of copper wire for its termination. (T/F)
9. Mother Board is a multilayered PCB for placing cards. (T/F)
10. Card Frame is used to suitably connect the card in slots. (T/F)

Fill in the blanks:

1. The main function of SPC exchange are _____ and _____.
2. Two subscribers of two different exchanges are connected through _____.
3. Loop signal is extended from _____ to _____.
4. Over all control of the exchange is done by _____.
5. Indoor and outdoor cables are terminated on _____.
6. Protective devices are used on _____ to protect _____, _____ in exchange.
7. To terminate a 2w trunk line number of pairs required are _____.
8. Transmission through copper wire offers less _____ and less _____.

Objective:

1. Enabling switching between two subscribers a card called _____ is required.

2. To check the idle or busy status of the subscriber, exchange performs _____.
3. To alert the called subscriber _____ is sent on line.
4. If the subscriber is busy the messages are stored in _____ switch.
5. When the signals are transmitted from the switch in digital form then it is known as _____.
6. Signaling in ISDN network is _____ or _____.
7. E&M signaling is used to connect _____.
8. 4wire E&M trunk will require _____ pairs of wires.
9. IDC means insulation displacement connector (true/false).

Objective:

1. Normally an IDC can accommodate _____ pairs of copper cable on it.
2. MDF's are to provide with _____ devices no it.
3. Gas discharge tubes works on the principle of _____ phenomenon.
4. MOV are _____ linear devices.
5. IDC are more reliable terminations than other terminations.

Objective:

1. Automatic connection between two subscribers is done by _____ system.
2. Electronic exchanges are easy to _____.
3. SPC stands for _____.
4. Digital switch provides 100% _____ voice and data network.
5. RAX stands for _____.
6. User cards and trunk cards are located in _____.
7. All control cards are duplicated in RAX. (True/False)
8. TGD card generates different types of _____.
9. Total number of slots in RAX exchange is _____.
10. OKI NE 1200 exchange have _____ LTE's.
11. SMPS is located in _____ rack of OKI NE1200.
12. In CME rack interchange of slots is not allowed. (T/F)
13. ISDN network is a _____ layer network.
14. BRI stands for Basic Rate Interface. (T/F)
15. BRI transmits _____ Basic channels and one digital channel.
16. PRI contains _____ Basic channels and one digital channel.

Objective:

1. Ringer stage produces audible ringing sound. (T/F)
2. Lifting the handset results in voltage drop from -48volt to +5v or +12v. (T/F)
3. One row and one column frequency is selected for pressing one digit on key pad.(T/F)
4. # and * key are special function key. (T/F)
5. DTMF stands for Dual Tone Multi Frequency. (T/F)
6. The purpose of decoder is to decode a valid pair of signaling tone. (T/F).

Objective(Basic Principal of SPC Exchange):

1. Switching, signaling and controlling are the 3 main function of SPC exchange. (T/F)
2. Switching provides bidirectional speech path between two subscribers. (T/F)
3. Loop signaling enables the subscriber to get connected to the exchange. (T/F)
4. Monitoring of the call process is done by controlling function. (T/F)
5. Program store contains the instructions to establish the call among various subscribers. (T/F)
6. Call store contains the details of call process and progress. (T/F)
7. Call stores are temporary stores. (T/F)
8. Terminal equipment contains line cards and trunk cards. (T/F)
9. Digital time switch consists of two memories such as speech memory and control memory. (T/F)
10. TST stands for Time Space Time switch. (T/F)
11. Scanner detects the status of the subscriber. (T/F)
12. Distribution of signals to subscriber and trunk is done by distributor. (T/F)

13. BORSCHT function is performed by control cards in exchange. (T/F)
14. SPC exchanges utilize common channel signaling. (T/F)
15. Exchange data contains hardware configuration of exchange. (T/F)
16. Class of service is part of subscriber data. (T/F)

Objective:

1. Operating system software is online as well as offline software in exchange. (T/F)
2. Signaling in exchange is a real time process. (T/F)
3. Mismatch treatment pertains to the dialed digits acceptable to the exchange. (T/F)
4. The path search program is used to identify a free path available for inlet and outlet. (T/F)
5. Mark and drive program is carried out by the respective hardware in the process. (T/F)
6. Data table consist of system logic and hardware information of exchange. (T/F)
7. SPC exchange have in-built-fault detection program. (T/F)
8. Self healing is done by data comparison of two duplicated units. (T/F)
9. In self healing process faulty units are in service but isolated. (T/F).

Objective:

1. SPC exchanges have two types of control structure, single processor and multiprocessor. (T/F)
2. In distributed control system more than one microprocessor are involved. (T/F)
3. Program store contains the details of general working of exchange. (T/F)
4. Translation store contains analysis table, port programming and data base. (T/F)
5. Call store is a temporary data of call setup. (T/F)
6. Duplication of CPU card is done to enhance the reliability of exchange. (T/F)
7. In multiprocessor system the translation store and call stores are available with each processor. (T/F)
8. Multiple processor also share call store. (T/F)
9. Principle of segmentation is used to carry out functions from different microprocessor. (T/F)
10. Scanning marking and distribution are dealt in first level of control system. (T/F)
11. Call processing is dealt in the second level of control system. (T/F)
12. Maintenance and administrative functions are dealt in third level of control system. (T/F)
13. Duplication of common control card is done to ensure round the clock service from exchange. (T/F)
14. To select the best CPU in working condition inter processor link is provided. (T/F).

Objective:

1. The basic need of signaling in exchange is to establish the call. (T/F)
2. Signaling is dependent on equipment and mode of operation. (T/F)
3. Local exchange signaling is called as subscriber signaling. (T/F)
4. Inter exchange signaling is called as trunk signaling. (T/F)
5. CAS and CCS are two methods of signaling. (T/F)
6. In CAS, the signal information is sent along with the channel. (T/F)
7. In CCS, the signal information is commonly sent on separate channel. (T/F)
8. Tone ON and Tone OFF signaling is a semi continuous signaling. (T/F)
9. Pulse type signaling employs pulses formed by impulse circuit. (T/F)
10. Signaling in general denotes change in state. (T/F)
11. In end to end signaling method, the intermediate exchange provides only a transmission path. (T/F)
12. Audible-visual signal are for alerting the subscriber. (T/F)
13. Progress signals are dial tones and ring back tones. (T/F)
14. Dialing digits from the subscriber is called as address signaling. (T/F)
15. DTMF signals are faster than pulse signal. (T/F).

Objective(ISDN Exchange)):

1. ISDN uses CCS7 signaling system.
2. BRI consist of 2B+D channels
3. PRI consists of 30B+D channels.
4. B channel data rate is 64 kbps.

5. D channel data rate in BRI is 16 kbps.
6. D channel data rate in PRI is 64 kbps.

Objective(PDH):

1. TDM uses _____ sharing of the transmission media.
2. Mr. A.H Reaves of USA developed _____ system.
3. Filtering is used to limit the _____ signal to the frequency band 300 to 3.4 KHz
4. Sampling is the process of _____ the analog signals at regular interval
5. Sampling Theorem states that sampling rate should be greater than _____ the highest signal frequency.
6. For a band limited signal of 4 KHz the sampling frequency is _____ KHz as per Nyquist Theorem.
7. The Time Period of Sampling in PCM is _____ seconds
8. Time available per channel basis is _____ seconds
9. The interval between two consecutive samples is _____ sec
10. PAM signals are converted into digital form by the process called _____
11. Quantization is the process of breaking down a continuous signal into _____
12. Quantization levels are given Binary values in a process called _____
13. To reduce the quantization error _____ is adopted
14. Encoding is the conversion of quantized analog samples to _____ signal
15. The signaling information is transmitted in timeslot _____
16. Alarms and supervisory are Transmitted in every _____ frame
17. The duration of multiframe is _____ second
18. The sampling rate of signaling channel is _____
19. PCM system uses _____ as line code
20. Time slot TS0 carries the _____
21. A 30 channel PCM has a bit rate _____

Fill in the Blanks:

- 1) OLTE Stands for _____
- 2) Railways had earlier used PDH links on OFC up to a speed of _____ Mbps.
- 3) Digital Microwave of Indian Railways supports a speed up to _____ Mbps.

Objective:

1. In E2 with bit rate of 8448 Kbps has ----- channel capacity
2. In E3 with bit rate of 34368 Kbps has -----channel capacity
3. In E4 with bit rate of 139264 Kbps has ----- channel capacity
4. In T1 with bit rate of 1544 Kbps has ----- channel capacity
5. PDH multiplexing from 2nd order onwards involves -----interleaving
6. PDH multiplexing from ----- order onwards involves Justification
7. A sub-frame of 2nd order digital multiplexing system is having ----- number of bits.
8. In the 2nd order MUX system frame repetition frequency is-----.
9. No. of justification control bits used per tributary in the 2nd order MUX system is-----.
10. In the 2nd order digital multiplexing system a frame is divided into -----of sub-frames.
11. For the fourth order digital multiplexing system the bit rate is 139.264 Mb/s with a tolerance value of-----.
12. In E2 Frame structure TS -----occupies Justification Bits
13. PDH E1 employs _____ interleaving.

Objective(Webfil):

1. The sub-rack has altogether _____ slots for housing the various modules.
2. Slot-12 and slot-13 has equal and parallel access to time slots _____ in WEBFIL mux.
3. Faulty A cross-connect table use when _____ tributary is having major alarm.
4. Faulty B cross-connect table use when _____ tributary is having major alarm.
5. Modified Remote A cross-connect table use when A-tributary is having _____ alarm.
6. _____ enables to isolate the Mux at the event of Failure.

7. During the normal operation of the network the NMS is kept under _____ mode.
8. Network Interface Module offers alarm related to _____ Module.
9. All the diagnostic commands can be withdrawn by sending an _____ command from the NMS.
10. _____ is done in NIM card to enable Clock setting.
11. Tributary module in Webfil Mux performs Generate 2 Mbps HDB-3 encoded interface signals complying with ITU-T _____
12. _____ setting of Tributary module in Webfil Mux enables Mux to operate as D/I or
End Terminal mode.
13. _____ setting of Tributary module in Webfil Mux enables Mux to set the Port Impedance.

Objective(Tejas):

1. The power dissipation of fully loaded configuration of TJ100MC-1 system is around 120 watts. (T/F)
2. The TJ100MC-1 has redundant power supplies. (T/F)
3. The input power supply tolerance for TJ100MC-1 system is – 40 V to – 60 V DC (T/F)
4. The power LED on the PS module of TJ100MC-1 turns off when the internal power converter is off. (T/F)
5. The active LED on the PS module of TJ100MC-1 turns green when the outputs of the supply are working and within range. (T/F)
6. An EEPROM is used in PS module of TJ100MC-1 system to store the part number, serial number and the manufacturing /testing data. (T/F)
7. The output circuits of the PS module in TJ100MC-1 system have blocking diodes for protection when two PS modules are connected in parallel via the back plane. (T/F)
8. True current sharing is not possible in the PS modules of TJ100MC-1 system. (T/F).

Objective:

1. Lite Tributary Card (LTC) is the heart of the TJ100MC-1 system. (T/F)
2. LTC card of TJ100MC-1 system plugs into the slot No. 3 (T/F)
3. LTC card of the TJ100MC-1 system provides the aggregate interfaces, clocks, processing and monitoring capability to the system. (T/F)
4. LTC card of TJ100MC-1 provides the interface RS232C port for local craft terminal. (T/F)
5. Two STM-1 optical interfaces in LTC card of TJ100MC-1 system have SC-PC type connectors. (T/F)
6. The power consumption of LTC card of TJ100MC-1 system is 16 W typical (T/F)
7. Minimum typical output power of LTC card of TJ100MC-1 for S1.1 type is –15 dBm. (T/F)
8. Minimum typical output power of LTC card of TJ100MC-1 for L1.1 type is –5 dBm. (T/F)
9. Maximum typical output power of LTC card of TJ100MC-1 for L1.2 type is 0 dBm. (T/F)
10. Receiver sensitivity of LTC card of TJ100MC-1 system is –28 dBm for S1.1 type application. (T/F)
11. LTC card of TJ100MC-1 is made available either for two STM-1o optical interfaces or for two STM-1e electrical interfaces. (T/F)
12. The NMS interface is available as an RJ45 connector on the LTC card of the TJ100MC-1 system. (T/F)
13. The Ethernet address of the network element is available in the non-volatile memory on the
LTC card of the TJ100MC-1 system. (T/F)
14. The default baud rate setting for the craft interface on the LTC card of TJ100MC-1 is
9600
bauds. (T/F)
15. When the telephone of the order-wire circuit is on the hook, Green OW LED is ON in the
LTC card of the TJ100MC-1 system. (T/F)
16. Green OW LED blinks when ringing takes place on the order-wire circuit of LTC card of
TJ100MC-1 system. (T/F)

Objective:

1. E1 tributary interface cards of Tejas STM-1/4 system are classified as TET16, TET21 and TET28. (T/F)
2. E1 tributary interface cards can be plugged into any of the slots from 10 to 14 of the TJ100MC-1 chassis. (T/F)
3. The power consumed by an E1 tributary card of TJ100MC-1 system is 8 W. (T/F)
4. TET 28 card of TJ100MC-1 system provides line interface to 28 E1 channels in both add and drop directions along with visual indicators. (T/F)
5. The impedance of the E1 interface on TET 28 of TJ100MC-1 system is 120 Ohms. (T/F).

Objective:

1. The STM-1 aggregate/tributary card A011 of TJ100MC-1 system is designated to function as ----- port STM-1 tributary card.
a) Three port b) Two port c) One port d) Four port
2. The maximum power consumed by an STM-1 tributary card A011 of TJ100MC-1 is -----
a) 2 W b) 12 W c) 22 W d) 32 W
3. The STM-1 aggregate/tributary card A012 of TJ100MC-1 system is designated to function as 2 ports STM-1 tributary card. (T/F)
4. When the LASER is ON and the corresponding port is transmitting, the green TX indicator of A011 of TJ100MC-1 system will glow. (T/F)
5. When the LASER is off, the red TX indicator of A011 of TJ100MC-1 system will glow. (T/F).

Objective:

1. The TP01 tributary interface card of TJ100MC-1 system provide line interfaces to -----
----- 10/100 Mbps signals.
a) Four b) Six c) Eight d) Ten
2. The TP01 card of TJ100MC-1 system maps and demaps the Ethernet data into the virtual containers of different granularity of the SDH frame.
a) VC-12 only b) VC-3 only c) VC-4 only d) different granularity
3. The maximum power consumed by a TPO1 card of TJ100MC-1 system is -----
a) 8 W b) 18 W c) 28 W d) 12 W
4. The RJ 45 green LED indicator on TP01 card of TJ100MC-1 system is ON if link (10 or 100 Mbps) pulses are detected. (T/F)
5. The RJ 45 green LED indicator on TP01 card of TJ100MC-1 system is blinking if there is an activity on the link. (T/F).

Objective(TTC):

1. Control or Train Traffic Control means _____
2. The means by which control of train traffic is exercised _____
3. Role of S&T in Control working _____
4. The function of proper utilization of rolling stock comes under _____ control
5. Efficient utilization of Engine power falls under _____ control
6. Power Controller in electrified sections is called as _____ Controller.
7. Trains movements information of a particular day can be had from _____.

Objective:

- 1) Railway control communication circuits are of _____ type circuits.
- 2) Type of signaling system suitable for control circuits is _____
- 3) Emergency control sockets are provided on rail posts at _____ km intervals.
- 4) Name any one control circuit used only in RE sections. _____
- 5) No. of tones used in DTMF system. _____

6) Maximum no. of way station codes available in DTMF system. _____

Objective:

- 1) Presently, there are _____ control communication systems working on UG cable media.
- 2) _____ of VF amplifier modules are available in a VF repeater bay.
- 3) _____ of quad cable is eliminated in Equalizer amplifier system.
- 4) _____ is an additional facility in Equalizer amplifier system.
- 5) The dual power supply unit in Equa. Amp. system is used for _____.
- 6) SOS code is sent by a _____ to test room equipment in case of fault.
- 7) In addition to speech unit a DTMF _____ is also needed at control office.
- 8) In addition to Control telephone a DTMF _____ is also needed at way stations.
- 9) A speech conversion unit is used for _____.
- 10) DTMF signal normal output level in Control office equipment is _____.

QUESTION BANK IN POWER PLANT (T-10A):

OBJECTIVE: BATTERIES:

Fill up the blanks with suitable words:

- 1) I.S. Specification number of battery graded Con.Sulphuric acid _____ (IS266-1977)
- 2) I.S. Specification number of Battery graded Distilled water is _____ (IS1069)
- 3) I.S. Specification number of acid resistant paint is _____.
- 4) I.S. Specification number of Plante positive Lead acid cells _____.
- 5) I.S. Specification number of pasted plates Lead Acid cells _____.
- 6) I.S. Specification number of tubular positive Lead Acid cells _____.
- 7) I.S. Specification number of Dry Leclanche cell is _____.
- 8) I.R.S. Specification number of Auto/Manual battery charger _____.
- 9) I.S. Specification number of Ni- Cd rechargeable pocket plated batteries is _____.
- 10) I.R.S. Specification of Low maintaince lead acid batteries is _____.
- 11) I.R.S. Specification number of SMF lead acid batteries is _____.
- 12) Voltage of a fully charged Lead Acid cell is _____.
- 13) Lead Acid cell can be discharged up to voltage of _____.
- 14) Separators prevents _____ between _____ & _____ plates in Lead Acid cell.
- 15) The active materials in Lead acid cell are _____, _____ & _____.
- 16) A 400Ah capacity Lead Acid cell can be charged with a maximum current of _____.
- 17) Capacity of any Lead Acid cell is given in _____ with _____ Hrs rating.
- 18) Electrolyte used in Lead Acid cell is _____.
- 19) Specific gravity of battery graded Con. Sulphuric Acid is _____.
- 20) Initial charging current rate can be taken as _____ % of its capacity in case of L,A, cells if manufacturer's rating is not available.
- 21) Maximum electrolyte temperature allowed during Initial charging of Lead Acid Cell is _____ °C.
- 22) Electrolyte for lead acid cell can be prepared by adding _____ to _____ in small quantities.
- 23) To avoid lead corrosion on battery connectors and terminals apply _____ or _____.
- 24) Per cell voltage in case of Float charging is _____.

- 25) Per cell voltage in case Boost charging is _____.
- 26) The rate of self discharge in case of Lead Acid cell can be taken as _____ per AH.
- 27) Specific gravity of electrolyte varies with temperature at the rate of _____ per 1°C.
- 28) The measuring instrument used for measuring Specific gravity is _____.
- 29) Sulphation can be identified by _____ & _____.
- 30) Sulphation in Lead Acid cell increases _____ in Lead Acid Cell.
- 31) In VRLA cell/battery the compensation of distilled water is by _____.
- 32) In VRLAB the pressure inside is regulated by _____.
- 33) _____ indicates the fully charged condition of Lead Acid cell.
- 34) Internal resistance is maximum at _____ Specific gravity.
- 35) If temperature increases the specific gravity _____ in Lead Acid Cell.
- 36) After discharge, both the plates becomes _____ in Lead Acid Cell,
- 37) The level of electrolyte above the plates should be always _____.
- 38) Buckling of plates in Lead Acid cell is due to _____ of plates.
- 39) During Initial charging, the charging can be stopped only after _____ % of AH input is fed.
- 40) The insulating pieces between positive and negative plates of a cell are called as _____.
- 41) The ratio of Acid to Distilled water to get 1200 Specific gravity electrolyte is _____:
- 42) Voltage of a fully charged Nickle Cadmium cell is _____.
- 43) Electrolyte used in Ni-Cd cell is _____.
- 44) The active material on +ve plates in Ni-Cd cell is _____.
- 45) The active material on -ve plates in Ni-Cd cell is _____.
- 46) When Ni- Cd cell is discharged the Cadmium Hydroxide is reduced to _____.
- 47) In Ni-Cd cell, the Lithium hydroxide is added to electrolyte to _____.
- 48) In Ni-Cd cell the plate grids are made from _____.
- 49) Specification number of sealed cylindrical Ni-Cd cell is _____.
- 50) Capacity range of pocket plated Ni-Cd cell is _____.
- 51) The material used for separators in Ni-Cd cell is _____.
- 52) In Automatic Battery charger the output controlling device is _____.
- 53) Recommended current rating of charger for an 80AH battery with maximum permissible load of 12 Amps is _____ Amps.
- 54) Automatic battery charger under S-86/20000 specification can supply constant output voltage for A.C. input variation from _____ V to _____ V.
- 55) The rectifier circuit converts _____ to _____.
- 56) In case of Ferro resonant type automatic regulator for sudden changes of input voltage or Load variation the response time is < _____.
- 57) In case of Ferro resonant type automatic regulator short circuit protection is achieved by _____ winding.
- 58) Voltage of a Solar cell is _____.
- 59) Charging current should be reduced when the battery starts _____.
- 60) Per cell voltage in case of Initial charging is _____.
- 61) Per cell voltage in case of Boost charging is _____.
- 62) Per cell voltage in case of Float charging is _____.
- 63) In case of Ni-Cd cell/Battery , charge input during first charge should be _____ capacity of C5 AH.
- 64) _____ are formed on the plate surphase , when Sulphated.
- 65) Note down _____ of each cell periodically.
- 66) The material used for grids in MFB is _____.
- 67) Topping up with distilled water in case of HDP plante Lead Acid cells can be done

- once in _____ months.
- 68) Terminal voltage of a fully discharged Ni-Cd cell is _____.
- 69) When the Lead Acid cell is discharged completely, both the plates are converted into _____.
- 70) The material used for grid structure in Lead Acid cell is _____.
- 71) The insulation resistance of Mains transformer in battery charger should be more than _____ M Ohms.
- 72) In battery charger the current rating of Diodes & SCR's should be more than _____ current flowing through them.
- 73) The resistors power rating, used in battery charger should be _____.
- 74) Voltage rating of capacitors used in chargers should be _____% above peak value.
- 75) I.S. Specification number of HRC fuses is _____.
- 76) Additional protection for chargers rated above 50 Amps shall be provided with extra _____ & _____.
- 77) Ripple in D.C. output of battery charger should be less than _____%.
- 78) Psophometric noise voltage in the output of a battery charger should be less than _____ Mv.
- 79) The charger works in _____ condition, if battery draws current less than 5% of its set value.
- 80) The charger switches to _____ when the battery draws current more than 8-12% of the set current.
- 81) Power factor of an Automatic battery charger must be above _____ lagging in all modes.
- 82) No load AC input current shall be _____ value in case of Automatic battery charger.
- 83) In Automatic battery charger the gate pulses for SCR's is generated by _____ circuit.
- 84) In case of Automatic battery charger permitted variation in the output voltage over the entire range of input AC supply variation is _____.
- 85) The grid structure of Lead Acid cell is made from _____ or _____ alloy.
- 86) Permissible raise in temperature above ambient for Mains Transformer shall be _____.
- 87) ON/OFF switch in battery charger shall be of _____ pole type.
- 88) The range of voltage control potentiometer in a battery charger shall be _____ to _____ V.
- 89) In chargers above 50Amps rating series fuses to be provided for _____ & _____ elements.
- 90) Specific gravity of electrolyte _____ when temp decreases.
- 91) Specific gravity correction factor per 1°C is _____.
- 92) Equivalencing charging is necessary to a battery connected in _____ charging.
- 100) Use of ballast resistance in a battery charger is _____.
- 101) Check _____, _____, _____ for every 8Hours during initial charging
- 102) Voltage of a Secondary cell depends on _____ & _____
- 103) A 300 AH 10H battery can supply 20 Amps current for _____ number of hours.
- 104) IS Specification of a plant positive type cells is _____ (IS-1652)

- 105) IS Specification of Tubular positive type cells is _____. (IS-1651)
- 107) Specific gravity correction factor per 1°C is _____.
- 108) Negative plates are one more than the positive plates to provide _____.
- 109) Vent holes are provided in vent cap to for _____ to _____.
- 110) The level of electrolyte in Lead Acid Cell is indicated by _____.
- 111) The level of electrolyte inside the cell is always be _____ " above the plates.
- 112) The current inside the cell is carried by _____.
- 113) The separators used in VRLAB are made from _____.
- 114) The grid in VRLAB are made from _____ alloy.
- 115) The normal battery operating temperature is _____ °C.
- 116) SMF cells need much addition of distilled water due to _____ principle.

INVERTER:

- 1) The electronic device which converts AC to DC is called as _____.
- 2) Inverter converts _____ to _____.
- 3) Efficiency range of an inverter should be within _____% to _____%,
- 4) Output frequency of inverter should be _____
- 5) In case of solid state inverter no load current shall not exceed _____% of full load current.
- 6) Inverters of 500VA and above shall be provided with _____ & _____ indications.
- 7) The PWM IC number used in 500 Watts inverter is _____.
- 8) SG2535A is an _____ I.C.
- 9) EMI/RFI filter is connected on the _____ side of the inverter.
- 10) The inverter automatically shuts off when battery voltage goes below _____ volts.
- 11) The inverter will be in OFF condition when mains A.C. supply is _____.
- 12) The Oscillator frequency inside the SG3525A I.C. is _____ Hz.

- 13) The power amplifier stage in inverter uses _____ as power amplifier device.
- 14) MCCB means _____.
- 15) The changeover time to inverter during Mains power failure is in _____
- 16) Shut- off input to IC SG3525A is given to pin No _____.
- 17) The insulation resistance of the inverter shall not be less than _____ M Ohms under 40°C.

Solar cells:

- 1) Solar cells converts _____ energy to _____ -- energy.
- 2) Solar panel is a combination of _____ connected in _____ & _____ fashion.
- 3) The solar cell is made from _____ & _____ materials.
- 4) Generation of electricity from Sun light is called as _____
- 5) A typical Solar cell is nothing but _____
- 6) Conversion efficiency of a Silicon solar cell is _____.
- 7) Falling of dust, dirt and snow, decreases the Solar arrays _____
- 8) A solar panel is installed inclined at an angle equal to the _____ of the plane.
- 9) Surface of solar cell is coated with _____ coating to increase _____.
- 10) Open circuit voltage of a solar cell is _____ V.

Say TRUE or FALSE:

- 1) Hexagonal shape of a solar cell provides more utilization area ()
- 2) Solar cell converts "Electrical energy" into "Solar energy" ()
- 3) Solar panel is a combination of solar cells ()
- 4) Voltage of each solar cell is 1.2 V()
- 5) Solar cells are made from semiconductor materials ()
- 6) The semiconductor material used for solar cell is Aluminium ()
- 7) Solar cell produces pollution ()
- 8) Efficiency of a Solar cell is very high ()
- 9) Solar system is having longer life ()

10) Conventional Lead Acid Cells are suitable for Solar panel ()

Uninterrupted power supply (UPS):

1) In Off-Line UPS the inverter is ON only when the mains supply _____.

2) Change over time in ON-line UPS is _____ mS

4) _____ of batteries are preferred in UPS.

5) Regulation of output voltage is done by using _____ principle in UPS

6) Normal PF rating of UPS is _____

7) In ON-Line UPS the battery will be always in _____ condition.

8) _____ or _____ device are used in Power Amplifier stage of UPS.

Say TRUE or FALSE:

1) In Off-Line UPS the inverter is always in 'ON' condition ()

2) In ON-Line UPS there is no change over time ()

3) In put to UPS is A.C ()

4) In OFF-Line UPS the relay will be OFF condition when AC input is present ()

5) UPS backup time can be increase by increasing the capacity of the battery ()

6) Only a single transformer is sufficient in ON-Line UPS ()

7) In OFF-Line UPS the battery will be charge only when the inverter is ON()

8) For UPS with rating higher than 2KVA IGBT device is used in power amplifier stage()

Choose correct answer:

1) The backup time in UPS depends on,
() A) Load B) Voltage C) Batter capacity D) all the three

2) The type of UPS used in Medical side is,
() A) ON-Line B) OFF-Line C) Line interactive D) Non of the above

3) Malfunctioning of UPS is avoided by incorporating,

() A) Fuse B) EMI/RFI filter C) Only filter D) controlling device

4) Input to an UPS is,

() A) Battery B) AC mains voltage C) rectifier output D) non of above

SMPS:

1) The switching & controlling element in SMPS is _____.

2) The output voltage of SMPS is regulated by,

() A) converter transformer B) pulse width of controlling pulses
C) input rectifier D) filter circuit

3) SMPS of 100 Amps rating requires 3 SMR modules of each rating ,

() A) 50Amps B) 25 Amps C) 100 Amps d) any value

4) The switching device used in SMPS is ,

() A) transistor B) IGBT C) MOSFET D) Diode

5) The switching device in SMPS operates at,

() A) above 100KHz B) VF range C) 10-100 KHz D) 10-100MHz

6) The converter transformer in SMPS operates at low frequency ()

12) The switching device in SMPS will be in always On condition ()

13) SMPS is a modular type power supply ()

Say TRUE or FALSE :-

1) The grids and separators will be effected if the specific gravity of electrolyte is below 1.240 ()

2) The internal resistance is minimum at specific gravity 1.240 in Lead Acid cell ()

3) Capacity of a Lead Acid cell is directly proportional to its length of service ()

4) The Initial charging current is less than normal charging current ()

- 5) Electrolyte can be prepared by adding distilled water to Sulphuric Acid()
- 6) During Initial charging add only distilled water ()
- 7) The battery which is kept continuously under "Float charging" should be given "Equavalising charge" to compensate low or uneven Sp. Gravities of cells ()
- 8) Buckling is one of the causes for internal short circuit ()
- 9) The internally short circuited cell gasses freely ()
- 10) Buckling of cell plates takes place due to excessive charging or discharging ()
- 11) Shedding means falling of active material from the plates ()
- 12) Do not allow the batteries to get fully discharged ()
- 13) Boost charging charges the battery quickly ()
- 14) The internally short leads to reverse polarity of the cell ()
- 15) Formation of lead corrosion at cell terminals causes high resistance ()
- 16) Rate of Trickle charging is 100 mA/AH capacity.
- 17) Distilled water to be added in MFB ()
- 18) Initial charging is a constant potential type of charging ()
- 19) Gas recombination principle is used in maintaince free sealed L.A. battery ()
- 20) Constant potential method is used to charge VRLA battery ()
- 21) Voltage of a fully charged Ni-Cd cell is 2.1 V()
- 22) Distilled water to be added during initial charging to maintain the level ()
- 23) Initial charging can be stopped before 50% of charging is completed ()
- 24) Trickle charging is given to a fully discharged battery ()
- 25) Boost charging is a constant potential type of charging ()
- 26) The nominal cell voltage of a MFB lead acid battery is 2V ()
- 27) Calcium alloy is having lower self discharge and increased conductivity ()
- 28) Maximum electrolyte temperature allowed during charging is 100°C ()
- 29)The active material on the positive plates in Lead Acid cell is Spongy Lead ()
- 30) Con. Sulphuric Acid is used as electrolyte in Lead Acid Cell ()

- 31) Secondary cell voltage depends on the number of plates (F)
- 32) Ampere-Hour efficiency can be increased by controlling the charging current (T)
- 33) Efficiency of a secondary battery is defined as the ratio of input divided by output (F)

DG Set:

Fill up the blanks with suitable words:

- 1) The D.G. Set converts _____ energy into _____ energy.
- 2) In Diesel engine the _____ is compressed in the cylinder.
- 3) During _____ stroke the power is transmitted to the crank shaft.
- 4) The liquid fuel is sprayed into the cylinder by _____.
- 5) The out-put voltage of generator is controlled by controlling the _____ of the shaft.
- 6) The speed of the Diesel engine is controlled by providing _____ on the engine shaft.
- 7) The fuel used in Diesel engine is _____ oil.

II. CHOOSE CORRECT ANSWER:

- 1) The paper element of fuel filter is to be changed for every,
() A) 250 Hrs B) 500 Hrs C) 800 Hrs D) 50 Hrs
- 2) Speed of the prime mover at full load is,
() A) 1200 RPM B) 1560 RPM C) 1570 RPM D) 1500 RPM
- 3) Engine starts and stops due to,
() A) Fuel tank filled completely B) air in fuel lines C) piston defective
D) non of the above

4) Compression ratio in Diesel engine is,

() A) 16:1 B) 1:16 C) 10:1 D) 5:1

5) Both the valves are closed during.

() A) suction stroke B) compression stroke C) exhaust stroke D) non of the above

7) The valves in DG set are lifted by,

() A) Cams on cam shaft B) piston C) crank shaft D) non of the above

8) Engine starts but stops after some time due to,

() A) Air in fuel line B) Oil tank is full C) piston faulty D) non of the three

9) The fuel in diesel engine is ignited by,

() A) spark plug B) Compression C) piston D) Non of the three

10) Lubricating oil in Diesel engine is located at,

() A) Tank B) piston C) Sump D) non of the three

11) The fuel filter in Diesel engine is to be replace after,

() A) 500 Hrs B) 800 Hrs C) 1000 Hrs D) 500 Hrs

III. Say TRUE or FALSE:-

1) Spark ignition system is required in diesel engine ()

2) Fuel tank in diesel engine should be cleaned for every 250 hours

of working ()

3) Excessive fuel consumption is due to incorrect value of fuel timing ()

4) The exhaust valve opens during power stroke ()

5) Governor throttle regulates the amount of fuel supplied to the

CABLES

Fill in the blanks:

1. RE cables VF quads are ----- insulated.
2. PET quads are used for-----in RE main cable.
3. The characteristic impedance of PET quads is-----.
4. Loading section length of RE main cable is-----.
5. Screening factor of lead sheathed cable is-----.
6. RDSO specification 6 quad jelly filled cable is -----.
7. SWBD cables are used for----- wiring.
8. The inductance value of loading coil used in RE main cable is-----.
- 9) Impedance of paper insulated pair of RE cable is _____.
- 10) Value of loading coil used in 6Quad cable is _____
- 11) The instrument used to measure the capacitance unbalance in cable is known as _____.
- 12) At road crossings the cables should be drawn through _____.
- 13) The cable used for emergency purpose is called as _____
- 14) Before laying the cable should be tested for proper _____ & _____.

STATE TRUE OR FALSE:

- 1) Conductor dia of re derivation cable is 0.9mm ()
- 2) RDSO specification for RE main cable IRSTC30/97 ()
- 3) Quad cables are not used in Non-RE area ()
- 4) 6 quad cable loading section length is 2 km ().
- 5) 6 quad cable is paper insulated ()
- 6) Emergency control post is provided for every 1 km. ()
- 7) Loop resistance of 6 quad cable is 600 ohms ()
- 8) RE main cables are aluminum sheathed ()

CHOOSE CORRECT ANSWER:

1) Loop resistance of 1 Km RE main cable is ,

() (A) 560 Ohms (B) 56 Ohms (C) 0.56 Ohms (D) 470 Ohm

2) The purpose of Armour in RE cable is,

() (A) mechanical protection (B) to screen the induced voltages
 © protection from moisture (D) protection from soil

3) Distance of Loading coil joint in a Loading section in RE section is,

() (A) 915 mtrs (B) 1830 Mtrs (C) 457 Mtrs (D) 200 Mtrs

4) The purpose of Al screened wires in 6Q cable is,

() (A) mechanical protection (B) to screen the induced voltages
 © protection from rats (D) protection from soil

5)The insulation test on RE cable is to be carried out for every,

() (A) 3 Months (B) 1 Month (C) 6 Months (D) non of the above

6) Switch board cable is used for ,

() (A) Indoor (B) Outdoor (C) both places (D) under ground