

# FINAL ANSWER KEY

Question Paper Code:	78/2017/OL
Category Code:	468/2016
Exam:	Junior Instructor-Technical Power Electronics System
Medium of Question:	English
Date of Test	19-09-2017
Department	Industrial Training Department
Alphacode	A

Question1:-During which decade did India see a negative population growth?

- A:-1871-81
- B:-1911-21
- C:-1921-31
- D:-1941-51

Correct Answer:- Option-B

Question2:-Kharif Crops are harvested in

- A:-October-November
- B:-June-July
- C:-March-April
- D:-January-February

Correct Answer:- Option-A

Question3:-Fiscal policy in India is formulated by

- A:-The Reserve Bank of India
- B:-The Planning Commission
- C:-The Finance Ministry
- D:-None of these

Correct Answer:- Option-C

Question4:-On which date Indian Independence Act of 1947 got royal assent?

- A:-19th June 1947
- B:-1st August 1947
- C:-10th August 1947
- D:-18th July 1947

Correct Answer:- Option-D

Question5:-Who among the following is known as "Mother of Indian Revolution"?

- A:-Bhikaji Rustam Kama
- B:-Sarojini Naidu
- C:-Aruna Asaf Ali
- D:-Suchetha Kripalani

Correct Answer:- Option-A

Question6:-In which five year plan India opted for mixed economy?

- A:-Fourth
- B:-Third
- C:-First
- D:-Second

Correct Answer:- Option-D

Question7:-Which district in Kerala leads in the production of cashew nuts?

- A:-Kollam
- B:-Wayanad
- C:-Kannur
- D:-Kozhikkode

Correct Answer:- Option-C

Question8:-Father of local self government in India

- A:-Lord Canning
- B:-Lord Rippon
- C:-Lord Lytton
- D:-Lord Wellesley

Correct Answer:- Option-B

Question9:-How many times Gandhiji visited Kerala?

- A:-Two times
- B:-Four times
- C:-Five times
- D:-Three times

Correct Answer:- Option-C

Question10:-Who was the first Portuguese Viceroy in Kerala?

- A:-Vascoda Gama
- B:-Nicolo Conti
- C:-Albuqurque
- D:-Almeida

Correct Answer:- Option-D

Question11:-The 2017 Udyanotsav festival was held in which of the following cities?

- A:-Jaipur
- B:-New Delhi
- C:-Mysore
- D:-Ooty

Correct Answer:- Option-B

Question12:-Who has won the 2017 Men's Singles Australian Open Tennis tournament?

- A:-Roger Federer
- B:-Andy Murray
- C:-Rafeal Nadal
- D:-Noval Djokovic

Correct Answer:- Option-A

Question13:-Which of the following state has attained 100% Aadhaar saturation in India?

- A:-Tamil Nadu
- B:-Kerala
- C:-Himachal Pradesh
- D:-Assam

Correct Answer:- Option-C

Question14:-Which among the following is known as "Sairandhri Vanam"?

- A:-Periyar National Park
- B:-Silent Valley National Park
- C:-Shenthurani National Park
- D:-Mudumalai National Park

Correct Answer:- Option-B

Question15:-Who wrote the famous book "We the People"?

- A:-R.K. Laxman
- B:-Chethan Bhagath
- C:-Arundhathi Roy
- D:-Nani Palkhivala

Correct Answer:- Option-D

Question16:-Who was the founder President of NSS?

- A:-K. Kelappan
- B:-Mannathu Padmanabhan
- C:-Kontoor Krishnapillai
- D:-Valparambil Valayudha Pillai

Correct Answer:- Option-A

Question17:-Who called Sree Narayana Guru as the "Second Buddha"?

- A:-Chattampi Swamikal
- B:-G. Sankara Kurup
- C:-Vakkom Abdhul Khader Moulavi
- D:-Vagbhadananda

Correct Answer:- Option-B

Question18:-The social reformer who said "Mind is God"?

- A:-Brahmananda Shivayogi
- B:-Pandit Karuppan
- C:-Poikayil Yohannan
- D:-Thycaud Ayya

Correct Answer:- Option-A

Question19:-The headquarters of "Prathyaksha Raksha Daiva Sabha"

- A:-Kottayam
- B:-Neyyattinkara
- C:-Eraviperoor
- D:-Kainakari

Correct Answer:- Option-C

Question20:-Who started the publication journal called "Abhinava Kerala"?

- A:-Nadaraja Guru
- B:-Dr. Palpu
- C:-Kumaranasan
- D:-Vagbhadananda

Correct Answer:- Option-D

Question21:-Silicon has an atomic number of 14, this means the atom has 14 \_\_\_\_\_.

- A:-Neutrons
- B:-Electrons
- C:-Protons and neutrons combined together
- D:-Valence electrons

Correct Answer:- Option-B

Question22:-The most commonly used electrical conductor is \_\_\_\_\_.

- A:-Lead
- B:-Tin
- C:-Brass
- D:-Copper

Correct Answer:- Option-D

Question23:-The opposition offered to the movement of electrons/current flow is known as \_\_\_\_\_.

- A:-Electric resistance
- B:-Current
- C:-Voltage
- D:-None of these

Correct Answer:- Option-A

Question24:-In a meter one main scale division is 5 volts, and it is divided into 10 small scale divisions. The meter can measure a minimum voltage of \_\_\_\_\_.

- A:-5 V
- B:-0.5 V
- C:-0.1 V
- D:-1 V

Correct Answer:- Option-B

Question25:-As the field intensity (H) in the core is increased, the flux density (B) \_\_\_\_\_.

- A:-Increases
- B:-Decreases
- C:-Becomes zero
- D:-Does not change

Correct Answer:- Option-A

Question26:-Material which can be strongly magnetised are known as \_\_\_\_\_ materials.

- A:-Paramagnetic
- B:-Diamagnetic
- C:-Ferro magnetic
- D:-Pure magnet

Correct Answer:- Option-C

Question27:-What material is used for making armature core?

- A:-Silicon steel
- B:-Aluminium
- C:-Copper
- D:-Mild steel

Correct Answer:- Option-A

Question28:-The speed of a universal motor \_\_\_\_\_.

- A:-Remains constant to the applied load
- B:-Is directly proportional to the applied load

C:-Is inversely proportional to the applied load

D:-Becomes zero when load is applied

Correct Answer:- Option-C

Question29:-The basic unit of inductance is \_\_\_\_\_.

A:-Farad

B:-Webber

C:-Henry

D:-Hertz

Correct Answer:- Option-C

Question30:-Inductive reactance of a coil is directly proportional to the \_\_\_\_\_.

A:-Alternating current flowing through it

B:-Induced emf in it

C:-Frequency of AC flowing through it

D:-All the parameters mentioned at A, B and C

Correct Answer:- Option-D

Question31:-Two capacitors  $C_1 = 1 \text{ nf}$  and  $C_2 = 10 \text{ nf}$ , are connected in series and applied to the battery voltage  $V = 11 \text{ V}$ . What are the voltages across the capacitors?

A:- $V_{C1} = 5.5 \text{ V}$ ;  $V_{C2} = 5.5 \text{ V}$

B:- $V_{C1} = 10 \text{ V}$ ;  $V_{C2} = 1 \text{ V}$

C:- $V_{C1} = 1 \text{ V}$ ;  $V_{C2} = 10 \text{ V}$

D:- $V_{C1} = 0 \text{ V}$ ;  $V_{C2} = 11 \text{ V}$

Correct Answer:- Option-B

Question32:-Mutual induction is obtained by placing two current carrying coils \_\_\_\_\_.

A:-Side by side close to each other

B:-Perpendicular to each other

C:-Far away from each other

D:-Both (1) and (2) above

Correct Answer:- Option-A

Question33:-The fundamental unit of measurement of resistance is \_\_\_\_\_.

A:-Ohm

B:-Milli ohm

C:-Kilo ohm

D:-Mega ohm

Correct Answer:- Option-A

Question34:-For measuring unknown resistance, initially choose \_\_\_\_\_.

A:-The highest ohms range

B:-The lowest ohms range

C:-Any ohms range

D:- $R \times 10$  ohms range

Correct Answer:- Option-A

Question35:-When three resistors  $R_1$ ,  $R_2$  and  $R_3$  are connected in series, the total resistance " $R_T$ " =`

A:- $R_1 + R_2 + R_3$

B:- $R_1 \times R_2 \times R_3$

C:- $1/R_1 + 1/R_2 + 1/R_3$

D:- $1/R_1 \times 1/R_2 \times 1/R_3$

Correct Answer:- Option-A

Question36:-Magnetic lines are concentrated at \_\_\_\_\_.

A:-At the centre of magnet

B:-Any one end of the magnet

C:-Along the magnet uniformly

D:-Both the ends of the magnet

Correct Answer:- Option-D

Question37:-Generation and distribution of AC power in India is normally \_\_\_\_\_.

A:-Single phase

B:-3 phase

C:-2 phase

D:-Either 2 phase or 3 phase

Correct Answer:- Option-B

Question38:-The principle of operation of universal motor, similar to \_\_\_\_\_.

- A:-DC shunt motor
  - B:-DC series motor
  - C:-DC short-shunt compound motor
  - D:-DC long-shunt compound motor
- Correct Answer:- Option-B

Question39:-The flux density of a coil can be increased by inserting a \_\_\_\_\_.

- A:-Brass core
- B:-Iron core
- C:-Rubber core
- D:-Plastic core

Correct Answer:- Option-B

Question40:-The frequency of induced emf in an AC generator is given by \_\_\_\_\_.

- A:- $120/PN$
- B:- $120P/N$
- C:- $PN/120$
- D:- $120N/P$

Correct Answer:- Option-C

Question41:-A charged capacitor acts like a \_\_\_\_\_.

- A:-Temporary voltage source
- B:-Magnetic energy source
- C:-Constant current source
- D:-Switch

Correct Answer:- Option-A

Question42:-The relation between frequency of an AC signal (F) and time period (T) is \_\_\_\_\_.

- A:- $F=T^2$
- B:- $F = 2T$
- C:- $F = 1/T$
- D:- $F = 1/2T$

Correct Answer:- Option-C

Question43:-A motor converts electrical energy into \_\_\_\_\_.

- A:-Magnetic energy
- B:-Mechanical energy
- C:-Potential energy
- D:-Chemical energy

Correct Answer:- Option-B

Question44:-When 2 inductors are in parallel, the effective value of inductance is given by  $L_T =$  \_\_\_\_\_.

- A:- $L_1 + L_2$
- B:- $L_1 \times L_2 / L_1 + L_2$
- C:- $L_1 \times L_2$
- D:- $L_1 + L_2 / L_1 \times L_2$

Correct Answer:- Option-B

Question45:-A transformer is an electrical device used to \_\_\_\_\_.

- A:-change the frequency of applied AC voltage
- B:-transfer electrical energy from one circuit to another without any direct electrical connection
- C:-convert applied DC into AC
- D:-convert applied AC into DC

Correct Answer:- Option-B

Question46:-A 3-phase transformer has \_\_\_\_\_.

- A:-1 primary and 3 secondary windings
- B:-3 primary and 1 secondary windings
- C:-3 primary and 3 secondary windings
- D:-3 primary and 6 secondary windings

Correct Answer:- Option-C

Question47:-A transformer has 800 turns in its primary winding and 200 in its secondary what is the primary voltage, if the secondary voltage is 40 V? Assume transformer losses as negligible?

- A:-8 V
- B:-16 V
- C:-40 V
- D:-160 V

Correct Answer:- Option-D

Question48:-Efficiency of a transformer is the ratio of \_\_\_\_\_.

- A:-Output power to input power
- B:-Input power to output power
- C:-Input current to output current
- D:-Output current to input current

Correct Answer:- Option-A

Question49:-The basic unit of capacitance is \_\_\_\_\_.

- A:-Ohm
- B:-Farad
- C:-Henry
- D:-Mho

Correct Answer:- Option-B

Question50:-The relationship between charge (Q), voltage (V) and capacitance (C) of a capacitor is \_\_\_\_\_.

- A:- $C = Q/V$
- B:- $C = QV$
- C:- $C = Q^2 V$
- D:- $C = V/Q$

Correct Answer:- Option-A

Question51:-Identify the instrument which is NOT used for measurement of capacitance \_\_\_\_\_.

- A:-Digital capacitance meter
- B:-AC bridge
- C:-RLC meter
- D:-Kelvin bridge

Correct Answer:- Option-D

Question52:-The capacitive reactance  $X_c$  is given by \_\_\_\_\_.

- A:- $2\pi FC$
- B:- $1/2\pi FC$
- C:- $2\pi /FC$
- D:- $FC/2\pi$

Correct Answer:- Option-B

Question53:-Current flowing through a capacitor is given by \_\_\_\_\_.

- A:- $V.X_c$
- B:- $V^2/X_c$
- C:- $V/X_c$
- D:- $V^2.C$

Correct Answer:- Option-C

Question54:-A semi conductor in its pure form is referred to as \_\_\_\_\_.

- A:-Intrinsic semiconductor
- B:-Extrinsic semiconductor
- C:-Crystal semiconductor
- D:-Doped semiconductor

Correct Answer:- Option-A

Question55:-The process of adding impurities to a pure semiconductor \_\_\_\_\_.

- A:-Diffusion
- B:-Forming
- C:-Etching
- D:-Doping

Correct Answer:- Option-D

Question56:-The potential difference across a PN junction is referred to as \_\_\_\_\_.

- A:-Potential difference
- B:-Barrier potential
- C:-Reverse potential
- D:-PN potential

Correct Answer:- Option-B

Question57:-When a germanium diode is connected in forward biased mode the voltage across the diode will be \_\_\_\_\_.

- A:-0.7 V
- B:-0.3 V
- C:-Is equal to applied voltage

D:-0 V

Correct Answer:- Option-B

Question58:-When a diode is tested using an ohm meter. It indicates the low resistance in both direction. The condition of the diode is \_\_\_\_\_.

A:-Open

B:-Short

C:-Leaky

D:-Good

Correct Answer:- Option-B

Question59:-A forward biased diode starts conducting when the applied voltage reaches certain voltage known as \_\_\_\_\_.

A:-End-in voltage

B:-Barrier voltage

C:-Peak voltage

D:-Saturation voltage

Correct Answer:- Option-B

Question60:-What value of the voltage is obtained directly from the wave form shown on a C.R.O when connected across the secondary of a transformer?

A:-Peak value

B:-R.M.S. value

C:-Peak-to-peak value

D:-Average value

Correct Answer:- Option-C

Question61:-The main component used in a ripple filter circuit is the \_\_\_\_\_.

A:-Capacitor

B:-Resistor

C:-Diode

D:-Transformer

Correct Answer:- Option-A

Question62:-The maximum forward current of an LED is about \_\_\_\_\_.

A:-10 mA

B:-50 mA

C:-.5 A

D:-1.0 A

Correct Answer:- Option-B

Question63:-Which colour LED has the lowest forward voltage drop?

A:-Red

B:-Orange

C:-Green

D:-Yellow

Correct Answer:- Option-A

Question64:-The time taken for etching PCB is in the range of \_\_\_\_\_.

A:-5 to 20 minutes

B:-20 to 40 minutes

C:-1 to 2 hours

D:-More than 2 hour

Correct Answer:- Option-A

Question65:-The PCB side on which components are mounted is referred to as \_\_\_\_\_.

A:-Copper side

B:-Component side

C:-Solder side

D:-Track side

Correct Answer:- Option-B

Question66:-The chemical used for removing copper from copper clad boards is called \_\_\_\_\_.

A:-Thinner

B:-Remover

C:-Eraser

D:-Etchant

Correct Answer:- Option-D

Question67:-In amplifiers, transistors are used for \_\_\_\_\_.

- A:-Enlarging small electronic signals
  - B:-Switching purposes
  - C:-Reducing electronic signals
  - D:-Both the purposes mentioned in (1) and (2)
- Correct Answer:- Option-A

Question68:-A transistor can be thought of as two PN junction diodes connected as \_\_\_\_\_.

- A:-PNPN
- B:-PNNP
- C:-NPNP
- D:-NNPP

Correct Answer:- Option-B

Question69:-The advantage of transistors over vacuum tubes is \_\_\_\_\_.

- A:-Very small size
- B:-Minimum power loss in the form of heat
- C:-Low operating voltage
- D:-All the three, mentioned above

Correct Answer:- Option-D

Question70:-NPN transistors are preferred to PNP transistors for \_\_\_\_\_.

- A:-Higher switching speed
- B:-Easy use in +ve supply rail
- C:-A wide range of operating temperature
- D:-The reasons mentioned in (1) and (2)

Correct Answer:- Option-A

Question71:-Small signal amplifiers are also known as \_\_\_\_\_.

- A:-Large power amplifiers
- B:-Medium power amplifiers
- C:-Low power amplifiers
- D:-Both medium power and low power amplifiers

Correct Answer:- Option-C

Question72:-In transistors, the width of the collector layer is \_\_\_\_\_.

- A:-Much less than the base region
- B:-Much wider than the base region
- C:-Much less than the emitter region
- D:-Same as that of the base region

Correct Answer:- Option-B

Question73:-The resistance measured by a multimeter between the anode and the cathode of good SCR should be \_\_\_\_\_.

- A:-Low
- B:-Medium
- C:-High
- D:-Infinity

Correct Answer:- Option-D

Question74:-In speed control circuits for DC motors using two SCR's \_\_\_\_\_.

- A:-Each SCR conducts at any time
- B:-One SCR conducts in positive half cycle and the other in negative half cycle
- C:-Both SCR's conduct at a time
- D:-Only one SCR conducts and the other does not conduct

Correct Answer:- Option-B

Question75:-Most common application of UJT is \_\_\_\_\_.

- A:-Schmitt trigger
- B:-Bistable multivibrator
- C:-Relaxation oscillator
- D:-Timer

Correct Answer:- Option-C

Question76:-DIAC is basically \_\_\_\_\_.

- A:-A PNP/NPN transistor
- B:-A PNP/NPN transistor with no base connection
- C:-A 4 layered NPN device
- D:-None of the above



Correct Answer:- Option-B

Question77:-The speed of an AC motor can be controlled by using \_\_\_\_\_.

- A:-SCR
- B:-TRIAC
- C:-DIAC with SCR
- D:-DIAC with TRIAC

Correct Answer:- Option-D

Question78:-A power MOSFET is capable to handle current upto \_\_\_\_\_.

- A:-1 A
- B:-50 A
- C:-10 A
- D:-100 A

Correct Answer:- Option-D

Question79:-An IGBT is a hybrid form of \_\_\_\_\_.

- A:-A diode and a transistor
- B:-A transistor and SCR
- C:-A bipolar transistor and a MOSFET
- D:-A FET and a MOSFET

Correct Answer:- Option-C

Question80:-MOSFET's are used in \_\_\_\_\_.

- A:-Inverters
- B:-SMPS
- C:-UPS
- D:-All the above

Correct Answer:- Option-D

Question81:-High speed switching can be obtained using a \_\_\_\_\_.

- A:-Power IGBT
- B:-PNP transistor
- C:-Diode
- D:-Vibrator

Correct Answer:- Option-A

Question82:-Power MOSFET and power IGBT are \_\_\_\_\_

- A:-One and the same device
- B:-Quite different devices
- C:-Similar semiconductor devices
- D:-Replaceable devices

Correct Answer:- Option-C

Question83:-Which one of the following semiconductor device may be used as a light sensor?

- A:-Photo diode
- B:-Photo transistor
- C:-LDR
- D:-Any one of the above

Correct Answer:- Option-D

Question84:-The material used for making optic-fibre cable in general is \_\_\_\_\_.

- A:-Copper
- B:-Transparent plastic
- C:-Aluminium
- D:-Steel

Correct Answer:- Option-B

Question85:-Which one of the following IC contains NOT gates \_\_\_\_\_?

- A:-IC 7400
- B:-IC 7404
- C:-IC 7402
- D:-IC 7408

Correct Answer:- Option-B

Question86:-Which of the following gates gives a high output with all its inputs high

- A:-NOT
- B:-NOR
- C:-OR

D:-X-OR

Correct Answer:- Option-C

Question87:-The logic gate which has 'high' output when its inputs are different is \_\_\_\_\_.

A:-NOR

B:-EX-OR

C:-NAND

D:-EX-NOR

Correct Answer:- Option-B

Question88:-The biggest advantage of ECL is \_\_\_\_\_.

A:-High fan out

B:-High speed

C:-Low power consumption

D:-High density

Correct Answer:- Option-B

Question89:-The term CMOS stands for

A:-Capacitance Metal Oxide Semiconductor

B:-Complimentary Metal Oxide Semiconductor

C:-Charged Metal Oxide Semiconductor

D:-Copper Metal Oxide Semiconductor

Correct Answer:- Option-B

Question90:-A BCD-to-Decimal decoder converts

A:-BCD code to decimal digits

B:-Binary code to decimal digits

C:-BCD code to binary code

D:-BCD code to grey code

Correct Answer:- Option-B

Question91:-The number of flip-flops required to construct a decade counter is \_\_\_\_\_.

A:-2

B:-3

C:-4

D:-6

Correct Answer:- Option-C

Question92:-The number of NOR gates required to construct R-S flip-flop is \_\_\_\_\_.

A:-1

B:-2

C:-3

D:-4

Correct Answer:- Option-B

Question93:-The basic building block of a counter is \_\_\_\_\_.

A:-AND gate

B:-OR gate

C:-NAND gate

D:-Flip-flops

Correct Answer:- Option-D

Question94:-ROM is a non-volatile memory. The name of volatile memory is \_\_\_\_\_.

A:-PROM

B:-SRAM

C:-EPROM

D:-RAM

Correct Answer:- Option-D

Question95:-Modern data storage device named 'pen drive' has a capacity of storing 16 GB data, what does it mean

A:- $16 \times 10^9$  bytes

B:- $16 \times 10^6$  bytes

C:- $16 \times 10^9$  bits

D:- $16 \times 10^6$  bits

Correct Answer:- Option-A

Question96:-An OP-AMP is designed to amplify

A:-AC voltage

B:-DC voltage

C:-Both AC and DC voltage

D:-Pulse signals only

Correct Answer:- Option-C

Question97:-DC operating voltage of IC 555 is

A:-+5 to +18 V

B:-+18 to +36 V

C:-+5 to +28 V

D:-+18 to +48 V

Correct Answer:- Option-A

Question98:-Approximately what is the frequency limit of the optical fibre

A:-20 GHz

B:-1 MHz

C:-100 MHz

D:-40 GHz

Correct Answer:- Option-D

Question99:-The higher the index number of a fibre optic cable \_\_\_\_\_.

A:-The higher the speed of light

B:-The lower the speed of light

C:-Has no effect on the speed of light

D:-The shorter the wavelength propagation

Correct Answer:- Option-B

Question100:-The three major groups in the optical system are

A:-The components, the data rate and response time

B:-The source, the link and the receiver

C:-The transmitter, the cable and the receiver

D:-The source, the link and the detector

Correct Answer:- Option-C