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(एक राष्ट्रीय महत्व का संस्थान, विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार)
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Entrance Examination 2020- Diploma _ in Operation Theatre & Anaesthesia Technology

SL No	Question	Answer	OptionA	OptionB	OptionC	OptionD
1	Strain gauge, LVDT and thermocouple are examples of	C	Active transducers	Passive transducers	Analog transducers	Primary transducers
2	Bridge rectifier is an alternative for.....	A	Ful wave rectifier	Peak rectifier	Half wave rectifier	Pulse wave rectifier
3	An audio amplifier is an example of	B	Digital Circuit	Linear Circuit	Rectifier	Relay
4	In a circuit a 33 Ω resistor carries a current of 2 A. The voltage across the resistor is	C	80 V	33 V	66 V	132 V
5	The frequency of domestic power supply in India is	C	60Hz	55hz	50hz	45hz
6	Which of the following does not change in a transformer?	D	Voltage	Current	Phase	Frequency
7	Resistance is measured in	B	Henries	C	Hertz	Watts
8	A material that does not allow current under normal conditions is	D	Insulator	Conductor	Semiconductor	Valence band
9	A multimeter measures	D	Current	Voltage	Resistance	A, B and C
10	A red, red, orange, gold resistor has a nominal value of	A	22000 Ω	2200 Ω	220 Ω	22 Ω
11	Four 0.15μ F capacitors are in parallel. The total capacitance is	D	0.15μF	0.30μF	0.45μF	0.6μF
12	Which of these diodes is used to detect optical signals?	A	Photodiode	Light emitting diode	Photovoltaic diode	None of these
13	Which of these diodes convert electrical energy into light?	B	Photodiode	Light emitting diode	Photovoltaic diode	None of these
14	What is the output of an AND gate when both the inputs are 0?	A	0	1	Floating	None of these
15	What is the barrier potential for Germanium?	A	0.3V	0.7V	1.0V	1.3V
16	Rectifiers are used to convert	B	Direct current to Alternating current	Alternating current to Direct current	High voltage to low voltage	Low voltage to high voltage
17	What is the barrier potential for Germanium?	A	0.3V	0.7V	1.0V	1.3V
18	Product of Force and Velocity is called:	B	Work	Power	Energy	Momentum
19	Which law is also called the law of inertia ?	A	Newton's first law	Newton's Second Law	Newton's Third Law	Newton's Fourth Law
20	What is the scale used for measuring the intensity of the earthquake?	C	Metric Scale	Quake Scale	Richter Scale	Epicentre Scale
21	Which of the following is/are vector quantity?	D	Temperature	Work	Power	Momentum
22	Who among the following discovered X-rays?	B	Marie Curie	W.C Roentgen	J.J Thomson	James Chadwick
23	The capacity of a body to do work is known as:	C	Strength	Power	Energy	Momentum
24	What should be the angle between force and displacement for maximum work to be done?	A	0° C	30°C	90° C	180° C
25	Which of the following factors affect the Surface Tension?	A	Nature of liquid	Area of Surface	Both a and b	None of these
26	Which of the following is NOT a mechanical wave?	C	Sound wave	Seismic wave	Light wave	Water waves
27	In which of the following the sound cannot travel?	D	Solids	Liquids	Gases	Vacuum
28	Where will be the image formed by a convex lens when the object is placed at the focus?	D	No image is formed	At focus	Between focus and optical centre	At infinity
29	What is the property of a conductor to resist the flow of charges known as?	C	Conductance	Conductivity	Resistance	Electric Potential
30	Which of the following is correct about magnetic field?	B	Magnetic field has magnitude but no direction	Magnetic field has both magnitude and direction	Magnetic field may or may not have direction	None of these
31	Which of the following is NOT a natural magnet?	D	lodestone	Pyrrhotite	Columbite	Titanium
32	Which of the following gives us the mass number of an atom?	C	Total number of Electrons	Total number of Neutrons	Total number of Proton and Neutrons	Total number of Proton
33	Which of these rays have the highest ionising power?	A	Alpha	Beta	Gamma	None of these
34	The absorption of ink by blotting paper involves	B	viscosity of ink	capillary action phenomenon	diffusion of ink through the blotting	siphon action
35	Light year is a unit of	B	Time	Distance	Light	Intensity of light
36	Light from the Sun reaches us in nearly	C	2 minutes	4 minutes	8 minutes	16minutes
37	Pascal(Pa) is the unit for	B	Thrust	Pressure	Frequency	Conductivity
38	Metals are good conductors of electricity because	A	they contain free electrons	the atoms are lightly packed	they have high melting point	None of these
39	Pick out the scalar quantity	B	Force	Pressure	Velocity	Acceleration
40	Sound waves in air are	B	Transverse	Longitudinal	Electromagnetic	Polarised
41	Magnetism at the centre of a bar magnet is	C	Minimum	Maximum	Zero	Can not predict
42	Of the following properties of a wave, the one that is independent of the other is its	A	Amplitude	Velocity	Wavelength	Frequency
43	Sound of frequency below 20 Hz is called	A	audio sounds	Infrasomic	Ultrasonic	Supersonic
44	Sound travels at the fastest speed in	D	Vacuum	Air	water	Steel
45	Optical fibre works on the	B	Principle of refraction	Total internal reflection	Scattering	Interference

46	Film and TV institute of India is located at	A	Pune (Maharashtra)	Rajkot (Gujarat)	Pimpri (Maharashtra)	Perambur (Tamilnadu)
47	The ozone layer restricts	D	Visible light	Infrared radiation	X-rays and gamma rays	Ultraviolet radiation
48	Headquarters of UNO are situated at	A	New York, USA	Hague (Netherlands)	Geneva	Paris
49	For seeing objects at the surface of water from a submarine under water, the instrument used is	B	Kaleidoscope	Periscope	Spectroscope	Telescope
50	For galvanizing iron which of the following metals is used?	D	Aluminium	Copper	Lead	Zinc
51	The electrical potential of earth is taken as:	A	Zero	Infinity	Unity	None of these
52	An electro magnetic wave can be produced, when charge is	D	Moving with a constant velocity	Moving in a circular orbit	Falling in an electric field	Both B and C
53	A semiconductor is formed by bonds.	A	Covalent	Electrovalent	Co-ordinate	None of these
54	A semiconductor has temperature coefficient of resistance.	C	Positive	Zero	Negative	None of these
55	A crystal diode has	A	One pn junction	Two pn junctions	Three pn junctions	None of these
56	A crystal diode is used as	B	An amplifier	A rectifier	An oscillator	A voltage regulator
57	A zener diode is used as	D	An amplifier	A rectifier	An oscillator	A voltage regulator
58	The disadvantage of a half-wave rectifier is that the.....	C	Components are expensive	Diodes must have a higher power rating	Output is difficult to filter	None of these
59	There is a need of transformer for	B	Half-wave rectifier	Centre-tap full-wave rectifier	Bridge full-wave rectifier	None of these
60	A 1,000 V power supply would use as a filter capacitor	A	Paper capacitor	Air capacitor	Mica capacitor	Electrolytic capacitor
61	A half-wave rectifier has an input voltage of 240 V r.m.s. If the step-down transformer has a turns ratio of 8:1, what is the peak load voltage? Ignore diode drop	D	27.5 V	86.5 V	30 V	42.5 V
62	The most widely used rectifier is	C	Half-wave rectifier	Centre-tap full-wave rectifier	Bridge full-wave rectifier	None of these
63	The number of depletion layers in a transistor is	B	One	Two	Three	Four
64	In a PNP transistor, the current carriers are	D	Acceptor ions	Donor ions	Free electrons	Holes
65	A transistor is a operated device	A	Current	Voltage	Both voltage and current	None of these
66	The input impedance of a transistor is	B	High	Low	Very high	Infinity
67	The voltage gain in a transistor connected in arrangement is the highest	C	Common base	Common collector	Common emitter	None of these
68	As the temperature of a transistor goes up, the base-emitter resistance	A	Decreases	Increases	Remains the same	None of these
69	The arrow in the symbol of a transistor indicates the direction of	C	Electron current in the emitter	Electron current in the collector	Hole current in the emitter	Donor ion current
70	A heat sink is generally used with a transistor to	D	Increase the forward current	Decrease the forward current	Compensate for excessive doping	Prevent excessive temperature rise
71	When transistors are used in digital circuits they usually operate in the	C	Active region	Breakdown region	Saturation and cutoff regions	Linear region
72	To operate properly, a transistor's base-emitter junction must be forward biased with reverse bias applied to which junction?	D	Collector-emitter	Base-collector	Base-emitter	Collector-base
73	The ends of a load line drawn on a family of curves determine	A	Saturation and cutoff	The operating point	The power curve	The amplification factor
74	When a silicon diode is forward biased, V_{BE} for a CE configuration is	C	Voltage-divider bias	0.4 V	0.7 V	Emitter voltage
75	What is the current gain for a common-base configuration where $I_E = 4.2$ mA and $I_C = 4.0$ mA?	D	16.8	1.05	0.2	0.95
76	An oscillator converts	B	a.c. power into d.c. power	d.c. power into a.c. power	Mechanical power into a.c. power	None of these
77	Hartley oscillator is commonly used in	A	Radio receivers	Radio transmitters	TV receivers	None of these
78	A Wien bridge oscillator uses feedback	C	Only positive	Only negative	Both positive and negative	None of these
79	The piezoelectric effect in a crystal is	A	A voltage developed because of mechanical stress	A change in resistance because of temperature	A change in frequency because of temperature	None of these
80	The binary number 10101 is equivalent to decimal number	D	19	12	27	21
81	The universal gate is	A	NAND gate	OR gate	AND gate	NOT gate
82	The resolution of an n bit DAC with a maximum input of 5 V is 5 mV. The value of n is	C	8	9	10	11
83	A device which converts BCD to seven segments is called	B	Encoder	Decoder	Multiplexer	None of these
84	A voltmeter is connected in a with the circuit component across which potential difference is to be measured	A	Parallel	Series	Series or parallel	None of these
85	The sensitivity of a multimeter is given in	C	Killo Ohms	Ampere	Killo Ohms/ Voltage	Killo Ohms/ Current
86	_____ is a blood pressure measuring instrument.	A	Sphygmomanometer	Ergometer	Treadmill	Holtmanometer

87	_____ is the recording of the bio-potentials generated by the movement of eye ball	B	Apexcardiography	Electro-oculography	Electro-retinography	Ballistocardiography
88	Which of the following instrument is used for recording the electrical activity of the muscles?	B	ECG	EMG	PCG	EEG
89	Which instrument is used for clinical detection of heart sounds?	A	Stethoscope	Endoscope	Anoscope	Proctoscope
90	What is MRI	B	Magnetic resolution imaging	Magnetic resonance imaging	Medical resonance imaging	Medical resonate imaging
91	Which one among the following vitamin is necessary for blood clotting	D	A	C	D	K
92	Exposure to sunlight helps a person improve his health because	D	the infrared light kills bacteria in the body	resistance power increases	the pigment cells in the skin get stimulated and produce a healthy tan	the ultraviolet rays convert skin oil into Vitamin D
93	What is the eye defect when a person can see nearby objects clearly but cannot see distant objects distinctly known as?	B	Cataract	Myopia	Hypermetropia	Presbyopia
94	Filter that amplifies frequency above certain value is called _____	B	Low pass filter	High pass filter	Band pass filter	Band stop filter
95	Transcutaneous means _____	A	Passing to the skin	Passing to the bones	Passing to the heart	Passing to the lungs
96	Why is preamplifier used?	B	For Amplification	For Stabilizing effect	For Reducing effect	For Modifying effects
97	How much blood is present in an average adult?	C	10-12 L	2-3 L	5-6 L	20-25 L
98	Anaemia is reduction/increase _____	B	In the carbon dioxide carrying capacity of blood	In the oxygen carrying capacity of blood	In the oxygen carrying capacity of blood	In the carbon dioxide carrying capacity of blood
99	Liquid part of blood is _____	D	Platelets	Red Blood Cells	White Blood Cells	Plasma
100	When the heartbeat is slower than the normal rate of the heart (less than 60), this type of arrhythmias called _____	A	Bradycardia	Tachycardia	Arterial contraction	Ventricular contraction