

## Physics ECAT Pre Engineering Online Test

Sr	Questions	Answers Choice
1	A signal appears after amplification, at the output terminal with a phase shift of $180^\circ$ , if it is applied at	A. inverting input B. non-inverting input C. any one of the input terminal D. none of them
2	OP-AMP has the following input terminals	A. one B. two C. three D. four
3	The amplifier which is used to perform mathematical operations electronically is known as	A. calculator B. OP-AMP C. computer D. any one of them
4	When a transistor is used as a switch the circuit in which the current is to be switched OFF and ON, is connected between the	A. base and emitter B. collector and emitter C. base and collector D. any one of these
5	The emitter-base junction of a transistor is forward-biased and collector-base junction is reverse-biased. If the base current is increased, its	A. $I_c$ will decrease B. $V_{CE}$ will increase C. $I_C$ will increase D. $V_{CC}$ will increase
6	When the emitter-base junction of a transistor is reverse biased, collector current	A. Reverses B. Increases C. Decreases D. Stops
7	The value of current gain of n-p-n transistor is of the order of	A. tens B. hundreds C. thousands D. ten thousands
8	For a n-p-n transistor, the conventional current equation can be written as	A. $I_E + I_C = I_B$ B. $I_C - I_B = I_E$ C. $I_C + I_B = I_E$ D. $I_B + I_E = I_C$
9	In a normally biased n-p-n transistor, an electron current $I_E$ flows from the	A. emitter into the base B. collector into the base C. base into collector D. none of these
10	In n-p-n transistor, emitter base junction is kept	A. reversed B. forward biased C. may be reversed or may be forward biased D. none of these
11	For normal operation of transistor, the batteries	A. $V_{CC}$ is of much lower value than $V_{BB}$ B. $V_{CC}$ is of much higher value than $V_{BB}$ C. $V_{CC}$ is equal to $V_{BB}$ D. none of these
12	For the normal operation of the transistor, its	A. emitter-base and collector base junctions are forward biased B. emitter-base junction is reversed biased and collector base junction is forward biased C. emitter-base junction is forward biased and collector-base junction is reverse biased D. any one of these
13	Which of the following has a great concentration of impurity	A. base B. emitter C. collector

		C. collector D. none of these
14	In a transistor, the central region is called	A. collector B. emitter C. base D. none of them
15	In a transistor, if the central region is n-type, then this type of transistor is known as	A. n-p-n transistor B. p-n-p transistor C. either of these D. none of these
16	A process is a reversible process, if the entropy of the system	A. increases B. decreases C. remains constant D. none of them
17	The disorder in the system increases due to the	A. removal of heat B. addition of heat C. removal or addition of heat D. none of them
18	An irreversible heat flow from a hot to cold substances of a system, causes the disorder to	A. decrease B. remains the same C. increase D. any one of them
19	If a system undergoes a natural process it will go in the direction that causes the entropy of the system plus the environment to increase, this is another statement of	A. second law thermodynamics B. first law of thermodynamics C. third law of thermodynamics D. none of them
20	In all natural processes where heat flows from one system to another, there is always a net	A. decrease in entropy B. increase in entropy C. decrease or increase in entropy D. none of them
21	When heat is removed from the system	A. negative B. positive C. zero D. any one of them
22	When heat is added into the system then change in entropy is	A. negative B. positive C. zero D. any one of them
23	Which quantity is important in stating the entropy of the system	A. initial entropy B. final entropy C. change in entropy D. none of them
24	Which of the following is a state variable	A. entropy B. pressure C. volume D. all of them
25	The concept of entropy was introduced into the study of thermodynamics in	A. 1856 B. 1865 C. 1656 D. 1685
26	The efficiency of diesel engine is	A. 25% B. 25 - 30% C. 35% D. 35 - 40%
27	No spark plug is needed in	A. petrol engine B. diesel engine C. both of them D. none of them
28	The efficiency of petrol engine is usually not more than 25% to 30% because of	A. friction B. heat losses C. both of them D. none of them
29	On the exhaust stroke, the outlet valves opens. The residual gases are expelled and piston moves	A. outwards B. inwards C. in either way D. none of these
30	On the power stroke, a spark fires the mixtures causing a rapid increase in pressure and temperature and the burning mixture expands	A. adiabatically B. isothermally C. isochorically D. isobarically