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SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
THIRUVANANTHAPURAM—695 011

ENTRANCE EXAMINATION - ACADEMIC SESSION JANUARY 2018

PROGRAMME: PG DIPLOMA IN NEURO TECHNOLOGY

Time:90 Minutes

Max.Marks: 100

(Select the most appropriate answer)

(There are no negative marks for wrong answers)

- The brain uses what percentage of the body's energy?
a) 20 per cent b) 10 per cent c) 2 per cent d) 50 per cent
- Which area of the brain is not part of the cerebral cortex?
a) Cerebellum b) Frontal lobe c) Parietal lobe d) Temporal lobe
- The brain wave with frequency between 8 to 13 Hz and a mean amplitude of 50 μ V are called
a) spike and waves due to Epilepsy b) delta waves c) theta waves d) alpha waves
- The number 3.2×10^{-5} A expressed using a metric prefix is
a) 320 mA b) 3.3 μ A c) 3,200 mA d) 32 μ A
- The length of the simple pendulum is increased by 44%. What is the percentage in its time period?
a) 10% b) 20% c) 40% d) 44%
- The unit of electric potential is
a) Coloumb b) Volt c) Ampere d) Farad
- An oscillator is an amplifier with
a) negative feedback b) positive feedback
c) no feedback d) variable negative feedback
- An ideal current source is one whose internal resistance is
a) very high b) very low c) zero d) infinite
- Electromagnets are made of soft iron because soft iron has
a) high susceptibility and low retentivity
b) low susceptibility and high retentivity
c) low susceptibility and low retentivity
d) high susceptibility and high retentivity
- In cathode ray oscilloscope, spots are formed on screen having
a) anode b) cathode c) grid d) matrix
- A man is watching two trains one leaving and the other coming in with equal speeds of ms^{-1} . If they sound their whistles, each of natural frequency of 250 Hz, the number of beats heard by the man will be (velocity of sound in air = $320 ms^{-1}$).
a) 6 b) 3 c) 0 d) 12
- A 20 cm wire carrying current of 10 A with magnetic field 0.30 T having angle 40° will produce force of
a) 0.21 N b) 0.25 N c) 0.31 N d) 0.39 N

29. The disease caused by deficiency of protein in children is called
 a) pellagra b) marasmus c) beri-beri d) rickets
30. Which one of these thermometers is portable as well as simple to use?
 a) Constant-volume gas thermometer
 b) resistance thermometer
 c) Thermocouple
 d) Mercury-in-glass thermometer
31. The maximum efficiency of a half-wave rectifier is
 a) 40.6 % b) 81.2 % c) 50 % d) 25 %
32. Movement of tongue muscle is controlled by
 a) facial nerve b) trigeminal nerve
 c) hypoglossal nerve d) vagus nerve
33. Temperature sensing can be achieved by the use of
 a) thermocouples b) RTDs c) thermistors d) all the above
34. Part of brain which controls voluntary action
 a) cerebrum b) cerebellum
 c) medula oblongata d) hypothalamus
35. Sensitivity of a thermometer refers to
 a) how quickly thermometer can register change in temperature
 b) amount of change in thermometric property for a unit change in temperature
 c) min and max temperatures that thermometer can measure
 d) None of above
36. The gas used in a refrigerator is
 a) cooled down on flowing
 b) heated up on flowing
 c) cooled down when compressed
 d) cooled down when expanded
37. Which one among the following vitamin is necessary for blood clotting?
 a) A b) D c) K d) C
38. In a mercury thermometer, it is assumed that length of liquid 'l' and temperature 'θ' are
 a) directly proportional to each other
 b) inversely proportional to each other
 c) weakly dependent on each other
 d) independent of each other
39. The blood which leaves the liver and moves to the heart has higher concentration of
 a) glucose b) bile pigments c) bile d) urea
40. In pendulum, heavy metal ball is called
 a) String b) Gong c) Hook d) Bob
41. Normal breadth rate of human is
 a) 10-16 b) 12-50 c) 12-20 d) 60-100
42. 20% of 2 is equal to
 a) 20 b) 4 c) 0.4 d) 0.04
43. $1/\tan\theta$
 a) sine b) cote c) coseco d) seco
44. How many balls of radius 4cm can be made from a solid sphere of lead of radius 8cm?
 a) 4 b) 8 c) 16 d) 2

45. The temperature of a body on Celsius scale is found to be $x^{\circ}\text{C}$, when it is measured by Fahrenheit thermometer, it is found to be $x^{\circ}\text{F}$. Then x is
 a) 301.25 b) 574.25 c) -313 d) -40
46. In physics, a common instrument to measure diameter of a circle is known as
 a) Rule b) Measuring tape c) Calipers d) Inch tape
47. Scalar Quantities are
 a) physical quantities which have magnitude only and no direction
 b) physical quantities which have no magnitude only and only direction
 c) physical quantities which have magnitude only and direction
 d) physical quantities which have no magnitude and no direction
48. If α, β are the roots of $x^2 + ax + b = 0$, then the roots of $x^2 - ax + b = 0$ are
 a) $\alpha, -\beta$ b) $-\alpha, \beta$ c) $-\alpha, -\beta$ d) α, β
49. SI unit for length is
 a) centimeter b) inches c) meter d) yards
50. The sum of the first three terms of an A.P is 6 and their product is -10. Then, the sum of squares of the terms is
 a) 25 b) 36 c) 37/2 d) 30
51. Bonding in diamond is
 a) Covalent b) Coordinate Covalent c) Ionic d) Vander Waal's forces
52. The mathematical statement of the first law of thermodynamics is
 a) $\Delta E = Q - W$ b) $\Delta E = Q + W$ c) $\Delta E = W - Q$ d) $\Delta E = -Q - W$
53. In CE configuration of amplifier, the resistor in emitter terminal is for
 a) AC bypassing b) Stabilization c) higher gain d) collector biasing
54. Which of the following terms refers to the molecular modeling computational method that uses quantum physics?
 a) Quantum mechanics b) Molecular calculations
 c) Molecular mechanics d) Quantum theory
55. Perimeter of a square is 40 cm. find the area?
 a) 10 cm^2 b) 400 cm^2 c) 100 cm^2 d) 160 cm^2
56. A can do a piece of work in 6 days and B can do in 4 days. How long will they take if both work together?
 a) $5/12$ b) $2.2/5$ c) $1.1/2$ d) none of these
57. The bleaching action of chlorine occurs in the presence of
 a) moisture b) sunlight
 c) pure oxygen d) pure sulphur dioxide
58. Sound is produced due to
 a) friction b) circulation c) vibration d) refraction
59. A patient's temperature changed daily between 96.8°F and 105.8°F during a course of illness. The temperature recorded on the Celsius scale
 a) 36, 41 b) 46, 51 c) 26, 41 d) 16, 41
60. In a periodic table from left to right, the atomic size
 a) decreases b) increases c) remains same d) none of these
61. The first term of a G.P whose second term is 2 and the sum to infinity is 8 is
 a) 1) b) 2) c) 3) d) 4)

98. Which statement is true regarding radiation hazard?

- a) Radiation guidelines are set by food and drug act
- b) Radiation is not transferred into the body
- c) Radiation does not affect a fetus
- d) Radiation accidents may be difficult to recognize

99. A stick partially immersed in water looks bend , it is a phenomenon of

- a) Reflection
- b) Parallax view
- c) Radiation
- d) Refraction

100. The first electronic computer to become widely known as

- a) UNIVAC
 - b) APPLE
 - c) IBM
 - d) ENIAC
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