МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ КЫРГЫЗСКОЙ РЕСПУБЛИКИ

ОШСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

МЕЖДУНАРОДНЫЙ МЕДИЦИНСКИЙ ФАКУЛЬТЕТ

КАФЕДРА ЕСТЕСТВЕННЫХ НАУК И МАТЕМАТИКИ

РАССМОТРЕНО

на заседании кафедры ЕНМ

прот. № _1_ от _30.8_ 2023г.

зав. каф. проф. А.Ы.Курбаналиев_____

УТВЕРЖДАЮ

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«____» _____ 2023г.

ФОНД ТЕСТОВЫХ ЗАДАНИЙ

дя итогового контроля по дисциплине **«Медицинская биофизика»** на 2023-2024 учебный год

направление: 560001 - лечебное дело (GM)

курс 1, семестр 2

Наименование дисциплины	Всего	Кредит	Аудиторные занятия (60ч)		СРС
			лекции	лабораторные	
Медицинская биофизика	120ч	4 кр	24ч	36ч	60ч
Кол-во тестовых вопросов	300				

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Ош- 2023 г.

1. What is the definition of kinematics?
a) The study of the motion of objects without considering the cause of motion
b) The study of the motion of objects including the cause of motion
c) The study of the motion of objects in the absence of any force
d) The study of the motion of objects in the presence of any force

2. Which of the following is a scalar quantity?
a) Velocity   b) Acceleration
c) Distance   d) Force

3. The rate of change of velocity is known as
a) Acceleration   b) Speed   c) Momentum   d) Force

4. What is the formula for velocity?
a) Velocity = Displacement/Time   b) Velocity = Time/Displacement
c) Velocity = Displacement x Time   d) Velocity = Displacement - Time

5. What is the formula for acceleration?
a) Acceleration = Velocity/Time   b) Acceleration = Time/Velocity
c) Acceleration = Velocity x Time   d) Acceleration = Velocity - Time

6. What is the formula for displacement?
a) $s = ut + 0.5at^2$ b) $s = ut - 0.5at^2$ b) $s = vt - 0.5at^2$ d) $s = vt + 0.5at^2$

7. What is the formula for final velocity?
a) $v = u + at$ b) $v = u - at$ c) $v = at - u$ d) $v = t/u$

8. What is the formula for the time taken for an object to reach a certain height under gravity?
a) $t = \sqrt{(2h/g)}$ b) $t = \sqrt{(h/2g)}$ c) $t = \sqrt{(2g/h)}$ d) $t = \sqrt{(g/2h)}$

9. What does the area under the acceleration-time graph represent for any given time interval
a) Final velocity   b) Distance travelled
c) Change in the velocity in that time interval   d) Displacement of the particle

10. When can we say that the resultant of two vectors is maximum?
a) Both the vectors are acting in opposite directions
b) Both the vectors are acting in the same direction
c) The vectors are perpendicular to each other
d) The vectors are acting at a 45-degree angle to each other

11. What is the maximum velocity of a particle that moves in a straight line and its position is defined by the equation $x = 6t^2 - t^3$ (where t is in seconds and x is in meters)?
a) 12 m/s   b) 6 m/s   c) 9 m/s   d) 3 m/s

12. If u_1 and u_2 are the velocities of two moving bodies in the same direction before impact and v_1 and v_2 are their velocities after impact, then the coefficient of restitution is given by:
a) $(v_1 + v_2)/(u_1 + u_2)$ b) $(v_2 - v_1)/(u_1 + u_2)$
c) $(v_2 - v_1)/(u_1 - u_2)$ d) $(v_1 + v_2)/(u_1 - u_2)$

13. During elastic impact, the relative velocity of the two bodies after impact is:
a) greater than the relative velocity of the two bodies before impact
b) equal and opposite to the relative velocity of the two bodies before impact
c) the same as the relative velocity of the two bodies before impact
d) less than the relative velocity of the two bodies before impact

14. The coefficient of restitution of a perfectly plastic impact is:
a)1   b) 0.5   c)   0   d)-1

15. What is impulse equal to?
a) Change in position   b) Change in velocity
c) Change in mass   d) Change in momentum

16. If string is stretched by two opposite forces of 10 N then tension in string is
a) 5N
b) 20 N
c) 10 N
d) zero

17. If we place some coins over paper strip and pull it with a jerk, then coins don't fall off because of
a) friction

b) inertia
c) resistance
d) force

18. To every action there is always an equal but opposite reaction, this statement is known as
a) newton's 2nd law of motion
b) newton's 1st law of motion
c) newton's 3rd law of motion
d) law of momentum

19. Banking of road prevents
a) sliding of vehicle   b) rolling of vehicle
c) skidding of vehicle   d) none of above

20. Ratio of force of limiting friction to normal reaction is
a) zero   b) constant   c) greater than 1   d) less than 2

21. Push and pull that moves or tend to move, stops or tends to stop motion of a body is known as
a) force
b) friction
c) velocity
d) momentum

22. Acceleration that is produced by a 15N force in a mass of 8 kg will be equal to
a) 1.5 ms^{-2}
b) 1.87 ms^{-2}
c) 2.35 ms^{-2}
d) 2 ms^{-2}

23. Cream separator acts on same principle of
a) centrifuge machine
b) pendulum
c) floatation
d) screw guage

24. Force of friction between a rolling body and a surface over which it rolls is called
a) sliding friction
b) rolling friction
c) limiting friction
d) none of above

25. Quantity of motion that body possesses due to its mass and velocity is known as
a) inertia
b) momentum
c) force
d) friction

26. Law of inertia is also known as Newton's
a) 1st law of motion
b) 2nd law of motion
c) 3rd law of motion
d) both A and B

27. Force of gravity acting on a body is known as its
a) mass
b) inertia
c) weight
d) force

28. Momentum of an iscolated system of two or more than two interacting bodies remains
a) variable
b) zero
c) negative
d) constant

29. Tyres roll over easily on
a) smooth surface

b) rough surface

c) on coal tar

d) none of above

30. Which of following material lowers friction when we pushed between metal plates

a) water

b) air

c) oil

d) fine marble powder

31. Body jumps out of a moving van. There is a danger for him to fall

a) towards the moving van

b) away from the van

c) in the direction of motion

d) opposite to the direction of motion

32. Work done in raising a box depends on

a)   How fast it is raised

b)   The strength of the man

c)   The height by which it is raised

d)   None of the above

33. A light and a heavy body have equal momenta. Which one has greater kinetic energy?

a.   The light body

b.   The heavy body

c.   The kinetic energy is equal

d.   Data is incomplete

34. A body at rest may have

a.   Energy

b.   Momentum

c.   Speed

d.   Velocity

35. If the momentum of a body is increased n times, its kinetic energy increase

a.   n times

b.   2n times

c. n^3 times

d. n^2 times

36. When work is done on a body by an external force, its

a.   kinetic energy increases

b.   potential energy increases

c.   Both kinetic energy and potential energy increases

d.   Sum of the kinetic energy and potential energy remains constant

37. If the K.E of a body is increased by 300% its momentum will increase by

a.   100%

b.   150%

c.   200%

d.   175%

38. A light and a heavy body have equal kinetic energy. Which one has a greater momentum?

a.   The light body

b.   The heavy body

c.   Both have equal momentum

d.   It is not possible to say anything without additional information

39. If the linear momentum is increased by 50% the kinetic energy will increase by

a.   50%

b.   100%

c.   125%

d.   25%

40. If the stone is thrown up vertically and return to the ground, its potential energy is maximum

a.   During the upward journey

b.   At the maximum height
c.   During the return journey
d.   At the bottom

41. The energy stored in wound watch spring is
a.   K.E
b.   P.E
c.   Heat Energy
d.   Chemical Energy

42. Which of the following statements are true?
a) Energy can be created and destroyed
b) Energy cannot be created but only destroyed
c) Energy cannot be destroyed but only created
d) Energy can neither be created nor destroyed

43. The energy possessed by an object because of its motion is termed _____
a) potential energy
b) kinetic energy
c) nuclear energy
d) solar energy

44. The maximum potential energy in a roller coaster is at _____
a) the top of the steep climb
b) somewhere during the climb
c) somewhere during the descent
d) the lowest point after the climb

45. Fire is a form of _____
a) solar energy
b) thermal energy
c) gravitational energy
d) kinetic energy

46. For a freely falling body, which of the following quantities will not change?
a) Total kinetic energy
b) Total potential energy
c) Total mechanical energy
d) Insufficient data

47. The rotational inertia of a rigid body is referred to as its —————.
a.   Moment of energy
b.   Moment of force
c.   Moment of inertia
d.   Moment of acceleration

48. If a body is rotating about an axis passing through its center of mass, the angular momentum of the body is directed along its —————.
a.   Circumference
b.   Radius
c.   Axis of rotation
d.   None of the options

49. Linear velocities of all the particles of the body in rotational motion is —————-.
a.   1
b.   0
c.   Same
d.   Different

50. The center of mass of a body
a.   lies inside the body
b.   lies outside the body always
c.   lies on the surface of the body always
d.   None of the options

51. Center of mass of an isolated system has a ……………

a. Increasing velocity
b. Constant velocity
c. Decreasing velocity
d. None of the options

52. A body in rotational motion possesses rotational kinetic energy given by ————.
a. $KE = 1/2\, \omega I^2$
b. $KE = 1/2\, I\omega^2$
c. $KE = 2\, \omega I^2$
d. $KE = I\omega$

53. The combination of rotational motion and the translational motion of a rigid body is known as ——————.
a. Frictional motion
b. Axis motion
c. Angular motion
d. Rolling motion

54. A particle performing uniform circular motion has angular momentum L. If its angular frequency is doubled and its kinetic energy halved, then the new angular momentum is
a. L/2
b. L/4
c. 2 L
d. 4 L

55. A thin uniform, the circular ring is rolling down an inclined plane of inclination of 30° without slipping. Its linear acceleration along the inclined plane will be
a. g/2
b. g/3
c. g/4
d. 2g/3

56. Moment of inertia depends on
a. Shape and size of the body
b. Mass
c. Position of the axis of rotation
d. All of these

57. If a body is rotating about an axis, passing through its center of mass then its angular momentum is directed along its
a. Radius
b. Tangent
c. Circumference
d. Axis of rotation

58. A solid cylinder of mass 20 kg, has a length 1 meter and a radius of 0.5m. then its momentum of inertia in kg m² about its geometrical axis is
a. 2.5
b. 5
c. 1.5
d. 3

59. A particle moves on a circular path with decreasing speed. Choose the correct statement.
a. Angular momentum remains constant.
b. Acceleration is towards the center.
c. Particles move on a spiral path with decreasing radius.
d. The direction of angular momentum remains constant.

60. A solid sphere is rotating in free space. If the radius of the sphere is increased while keeping the mass same, which one of the following will not be affected?
a. Moment of inertia
b. Angular momentum
c. Angular velocity
d. Rotational kinetic energy

61. A hollow cylinder and a solid cylinder having different mass diameters are released from rest simultaneously from of an inclined plane. Which will reach the bottom first?

a.	solid cylinder

b.	can't be determined without knowing their masses

c.	hollow cylinder

d.	can't be determined without knowing their diameters

62. Which part of the ear has no role to play in hearing but is very important?

a) Ear ossicles

b) Organ of Corti

c) Eustachian tube

d) Vestibular apparatus

63. It receives sound vibration and passes to the eardrum

a) outer ear

b) middle ear

c) inner ear

d) eustachian tube

64. The border between the middle and inner ear is formed by

a) incus

b) oval window

c) pinnae

d) tympanic membrane

65. The Organ of Corti is present in

a) scala vestibuli

b) scala tympani

c) scala media

d) none of the above

66. The membranous labyrinth contains

a) Cystolymph

b) Otolymph

c) Perilymph

d) Endolymph

67. Find the correct statement about the eustachian tube

a) connects internal ear to external ear

b) it equalises pressure between middle ear and outer atmosphere

c) connects middle ear to pharynx

d) Both (b) and (c)

68. Find the correct statement about Inner ear

a) made up of bony and membranous segments

b) membranous labyrinth encloses bony labyrinth

c) endolymph surrounds membranous labyrinth

d) air-filled inner segment

69. Match the following

Column I	Column II
Reissner's membrane	(i) covered by mucous membrane
Incus	(ii) terminates at the oval window
Tympanic membrane	(iii) separates scala media and scala vestibuli
Scala vestibuli	(iv) anvil-shaped

a) iii, iv, i, ii

b) i, ii, iii, iv

c) iii, i, ii, iv

d) i, iii, iv, ii

70. Find the incorrect match

a) Middle ear – amplifies sound waves

b) Hair cells – present on basilar membrane

c) Saccule and utricle – maintain static equilibrium

d) Cristae – perform hearing function

71. The basilar membrane is present between

a) scala vestibule and scala media

b) scala media and scala tympani

c) both (a) and (b)

d) scala vestibule and scala tympani

72. Which of the following is a correct match of ear part and its function?

a) Semicircular canal – equalizes the pressure on either sides of the ear drum

b) Tectorial membrane – determines patterns of vibration of sound waves

c) Eustachian tube – maintains body balance and posture

d) Organ of Corti – increases the efficiency of sound waves

73. Time taken to complete a wave is termed as

a)   span

b)   period

c)   life

d)   duration

74. Any two shortest points in a wave that are in phase are termed as

a)   wave distance

b)   wavelength

c)   phase length

d)   amplitude

75. Direction of waves is parallel to distance of vibration in

a)   transverse waves

b)   longitudinal waves

c)   both transverse and longitudinal waves

d)   none of waves

76. Sound is a good example of

a)   transverse waves

b)   longitudinal waves

c)   both transverse and longitudinal waves

d)   none of waves

77. Motion that is repeated at regular intervals is termed as

a) Vibration

b)   Oscillation

c)   Ventilation

d)   Periodic motion

78. A pendulum bob is a good example of

a)   Vibration

b)   Oscillation

c)   Ventilation

d)   Periodic motion⌷OBJ⌷er

79. Sound is a bad example of

a)   transverse waves

b)   longitudinal waves

c)   both transverse and longitudinal waves

d)   none of waves

80. If we increase wavelength frequency would

a)   increase

b)   decrease

c)   remain same

d)   may increase or decrease

81. Waves transfer energy from one point to other.

a)   It's true

b)   Its false

c)   its neutral
d)   None of others

82. Direction of waves is perpendicular to direction of vibration in
a)   transverse waves
b)   longitudinal waves
c)   both transverse and longitudinal waves
d)   none of wavesA

83. Ups and downs in transverse waves are termed as
a)   compression and rarefaction
b)   crests and rarefactions
c)   compressions and troughs
d)   crests and troughs.

84. A source of any wave is
a)   Ventilation
b)   Oscillation
c)   Energy
d)   Force

85. Energy in waves is transfer and medium is
a)   also transferred
b)   not transferred
c)   medium does not exist
d)   may transfer or may not transfer

86. Types of waves is/are
a)   latitudinal and longitudinal
b)   transverse and latitudinal
c)   transverse only
d)   transverse and longitudinal

87. When we decrease wavelength frequency
a)   increases
b)   decreases
c)   remains same
d)   may increase or decrease

88. If we wave a rope, medium would be
a)   hand by which rope is waved
b)   rope itself
c)   other side to which rope is tied
d)   air

89. Two points on same line at same distance and speed are said to be in
a)   parallel
b)   phase
c)   displacement
d)   pair

90. When we decrease wavelength frequency
a)   increases
b)   decreases
c)   remains same
d)   may increase or decrease

91. If we wave a rope, medium would be
a)   hand by which rope is waved
b)   rope itself
c)   other side to which rope is tied
d)   air

92. A wave is made up of
a)   air molecules
b)   vibrations

c)   periodic motions

d)   oscillations

93. Sounds of frequency higher than 20,000 Hz which are inaudible to normal human ear are called

a) noise

b) frequency

c) ultrasonics

d) amplitude

94. SONAR is abbreviation of

a) small navigation and random

b) sky navigation and ranging

c) sun nuclear ranging

d) sound navigation and ranging

95. A ship sends ultrasound that returns from seabed and is detected after 3.42 s. If speed of ultrasound through seawater is 1300 ms^{-1}, then distance of seabed from ship would be

a) 3000 m

b) 2600 m

c) 2200 m

d) 2800 m

96. Ultrasonic waves carry more

a) energy

b) frequency

c) heat

d) both frequency and energy

97. Wavelength of ultrasonic waves is

a) more than audible sound

b) less than audible sound

c) equal to audible sound

d) greater than light wave

98. Ultrasound is also useful for _____

i. detecting fault in metal sheets ii. imaging marine depths iii. looking for metals beneath the earth's surface iv. detecting distances v. detecting earthquakes

a) ii, iii, v

b) i, iv, v

c) i, ii, iv

d) ii, iii

99. What property of sound waves acts like the principle of ultrasound?

a) Reflection and Refraction

b) Reflection only

c) Refraction only

d) Propagation

100. Which of the following medical imaging modality other than ultrasound does not use any form of radiation?

a) PET Scan

b) SPECT Scan

c) CT Scan

d) MRI

101. For which of these areas can the ultrasound be taken for an infant but not for an adult?

a) Cranium

b) Chest

c) Arms

d) Legs

102. A piezoelectric crystal is used to produce the ultrasound waves. What kind of ultrasound is produced?

a) Pressure wave ultrasound

b) Electrical wave ultrasound

c) Sound wave ultrasound
d) Simple ultrasound
103. How is a medium characterized?
a) By its thickness
b) By its acoustic impedance
c) By its water content
d) By its density
104. The wave velocity of ultrasound in soft tissues is 1540m/s and the impedance offered by it is 1.63 X 106 kg/m²s. What is the density of the soft tissue?
a) 0.1058441 kg/m^3
b) 10.58441 kg/m^3
c) 1058.441 kg/m^3
d) 105844.1 kg/m^3
105. Which of the following relations are true?
a) γ increases, penetration of sound increases, resolution decreases
b) γ increases, penetration of sound decreases, resolution decreases
c) γ increases, penetration of sound decreases, resolution increases
d) γ decreases, penetration of sound increases, resolution increases
106. When an abdominal ultrasound is done, why is it advised to have a full bladder?
a) To have a good acoustic window
b) To increase the water content
c) To lower impedance
d) To allow for better propagation of waves
107. What does the red dot on the probe help within the produced image?
a) To check if the correct probe was used
b) To check the probe orientation
c) To check the depth of the probe that was used
d) To check the plane of the image.
108. The rate at which an ultrasound pulse is absorbed (attenuated) as it passes through tissue is affected by:
   a.   The pulse amplitude.
   b.   The pulse intensity.
   c.   The pulse frequency.
   d.   Characteristics of the tissue.
109. The parameters spatial-peak, temporal-average, and pulse-average must be considered when expressing values for ultrasound:
   a.   Intensity.
   b.   Absorption.
   c.   Velocity.
   d.   Pulse rate
110. The lowest rate of ultrasound absorption occurs in:
   a.   Fat.
   b.   Air.
   c.   Bone.
   d.   Lung.
111. The principal advantage of an annular-array transducer is that it provides:
   a.   Faster imaging.
   b.   Better penetration.
   c.   Variable frequency.
   d.   Variable focal depth.
112. One or more ghost-images of a body structure displayed at different depths within an ultrasound image are signs of:
   a.   Shadowing.
   b.   Reverberation.
   c.   Refraction.

113. The tympanic membrane separates the ear canal from the _____
a) upper ear cavity
b) lower ear cavity
c) middle ear cavity
d) inner ear cavity

114. The middle ear is exposed to atmospheric pressure only through the _____
a) eustachian tube
b) tympanic membrane
c) pinna
d) auditory nerve

115. The major function of the middle ear is _____
a) to transfer movements of the air in the outer ear to the cochlea
b) to transfer movements of the air in the outer ear to the auditory nerves
c) to transfer movements of the air in the outer ear to the tympanic membrane
d) to transfer movements of the air in the outer ear to the fluid-filled chambers of the inner ear

116. The human ear responses to vibrations ranging from _____
a) 20KHz – 20MHz
b) 2KHz – 20MHz
c) 20Hz – 20KHz
d) 2Hz – 2KHz

117. Name the bone that rests upon the lower end of the cochlea and passes the vibrations directly into the fluid within.
a) malleus
b) stapes
c) incus
d) hammer

118. Unit of sound intensity _____
a) joules per sq. cm
b) watt per sq. cm
c) joules per cm
d) watt per cm

119. Sound intensity is proportional to the _____ of sound pressure.
a) cube
b) square
c) inverse square
d) inverse square root

120. Decibel expresses the logarithm of the ratio between two sound _____
a) intensities
b) powers
c) pressures
d) intensities, powers and pressures

121. What is the unit of dB?
a) watts per sq cm
b) dyne per sq cm
c) unit less
d) watts per cm

122. If I1 and I2 are two intensities in watts per square centimetre, then the number of decibels with which they are related can be expressed as _____
a) $N = 10 \log I1/I2$
b) $N = 10 \log I2/I1$
c) $N = -10 \log I1/I2$
d) $N = \log I1/I2$

123. _____ is specialized equipment, which is used for the identification of hearing the loss in individuals.

a) gaugemeter
b) tachometer
c) manometer
d) audiometer

124. Which threshold of hearing is measured by a pure-tone audiometer?
a) air-conduction thresholds of hearing
b) bone-conduction thresholds of hearing
c) speech reception thresholds for diagnostic purposes
d) air-conduction and bone-conduction thresholds of hearing

125. Speech audiometers are normally used to determine _____
a) speech reception thresholds for diagnostic purposes
b) air-conduction and bone-conduction thresholds of hearing
c) bone-conduction thresholds of hearing
d) air-conduction thresholds of hearing

126. What is fluid mechanics?
a) Study of fluid behaviour at rest
b) Study of fluid behaviour in motion
c) Study of fluid behaviour at rest and in motion
d) Study of fluid behaviour at rest and in motion

127. Which of the following is the basic principle of fluid mechanics?
a) Momentum principle
b) Energy equation
c) Continuity equation
d) All of the mentioned

128. What is fluid mechanics used for?
a) Fluid mechanics enables to comprehend the behaviour of solid fluids under pressure
b) Fluid mechanics enables to comprehend the behaviour of fluids under a variety of forces & atmospheric conditions
c) Fluid mechanics enables to comprehend the behaviour of fluids under various temperatures only
d) None of the mentioned

129. If a person studies about a fluid which is at rest, what will you call his domain of study?
a) Fluid Dynamics
b) Fluid Mechanics
c) Fluid Statics
d) Fluid Kinematics

130. Which among the following is the standard symbol for Atwood number?
a) A_r
b) A
c) a
d) AR

131. Which of the following method is used exclusively in fluid mechanics?
a) Eulerian method
b) Lagrangian method
c) Neither Lagrangian nor Eulerian method
d) Both Lagrangian and Eulerian methods

132. Which of the following method is most commonly used in fluid mechanics for analysis?
a) Eulerian Method
b) Control volume analysis
c) Langragian method
d) None of the mentioned

133. When is a fluid called turbulent?
a) High viscosity of fluid
b) Reynolds number is greater than 2000
c) Reynolds number is less than 2000
d) The density of the fluid is low

134. Which among the following is the standard symbol for Blake number?
a) ba
b) b
c) Bi
d) Bl

135. Stagnation point is the point in fluid mechanics where the velocity of the fluid at that point is _____
a) unity
b) constant
c) infinite
d) zero

136. Which among the following is the standard symbol for Archimedes number?
a) A_r
b) A
c) a
d) AR

137. Which among the following is referred to as the temperature at a stagnation point in the flow of fluids in fluid mechanics and thermodynamics.
a) Absolute temperature
b) Maximum temperature
c) Stagnation temperature
d) Hydraulic temperature

138. What is model testing?
a) Overall testing
b) Function testing
c) Partial testing
d) Performance testing

139. When is the fluid called laminar?
a) Low viscosity
b) The density of the fluid is high
c) Reynolds number is greater than 2000
d) Reynolds number is less than 2000

140. Which among the following provides the third principle in fluid mechanics?
a) Conservation of Heat
b) Conservation of volume
c) Conservation of linear momentum
d) Conservation of mass

141. When a fluid is subjected to resistance, it undergoes a volumetric change due to _____
a) Cohesion
b) Strain
c) Compressibility
d) Adhesion

142. The compressible flow is assumed to be _____
a) Adiabatic only
b) Isentropic only
c) Isentropic and adiabatic
d) Polytropic

143. Principle of fluid mechanics works on the utilization of_____
a) Velocity
b) Accelerating mass
c) Volume
d) Work

144. Open channel flow takes place _____
a) In a pump
b) Within a cylindrical depth

c) On a free surface
d) In the pipe

145. Which of the following is a type of fluid based on viscosity?
a) Real Fluid
b) Ideal Fluid
c) Newtonian Fluid
d) All of the mentioned

146. The viscous force the relative motion between the adjacent layers of a fluid in motion. Which of the following flowing fits best in the sentence?
a) never affects
b) may effect under certain conditions
c) facilitates
d) opposes

147. Pressure intensity or force due to pressure gradient for fluid at rest is considered as which of the following kind of force?
a) Body force
b) Force due to motion
c) Surface force
d) None of the mentioned

148. Pressure variation for compressible fluid is maximum for which of the following kind of process?
a) Adiabatic
b) Quasi Static
c) Isothermal
d) None of the mentioned

149. Which of the following principle is used for calculating the centre of pressure?
a) Principle of balancing of momentum
b) Principle of momentum
c) Principle of conservation of energy
d) None of the mentioned

150. Which of the following cannot be the value of absolute pressure of a fluid at any point?
a) 0
b) 1.45 bar
c) – 1 bar
d) 24 bar

151. Second law of thermodynamics implies that cycle efficiency of thermodynamic process must be
a)   greater than unity
b)   less than unity
c)   equal to unity
d)   None of these

152. Ratio of specific heat capacity at constant pressure to specific heat capacity at constant volume is always
1.   Equal to Unity
2.   Less than Unity
3.   Greater than Unity
4.   Zero

153. A system in which there may exchange energy but not mass called
a)   Open System
b)   Close System
c)   Insulated System
d)   Isolated System

154. For thermodynamic constant pressure process, boundaries are
a)   Partially fixed
b)   Movable
c)   Fixed
d)   Infinite

155. For any irreversible process, net entropy change is
a)   positive
b)   zero
c)   negative
d)   infinite

156. Difference of specific heat capacity at constant pressure and specific heat capacity at constant volume is equal to
a)   Gas Constant
b)   Planck's Constant
c)   Total Heat Capacity
d)   None of these

157. In an irreversible process, there is
a)   gain of heat
b)   loss of heat
c)   no loss of heat
d)   None of these

158. Extensive property of thermodynamics is
a)   Temperature
b)   Pressure
c)   Mass
d)   Density

159. During thermodynamic throttling process
a)   there is no change of internal energy
b)   no work is done
c)   heat exchange does not take place
d)   All of these

160. In an isothermal process for perfect gas, sum of heat flow and work input is
a)   Zero
b)   Maximum
c)   Minimum
d)   Infinite

161. An ideal heat engine operates between 600 K and 900 K. efficiency of engine is
a)   90%
b)   45%
c)   33%
d)   70%

162. A certain perfect gas has Cp = 0.846 KJ/kgK and Cv = 0.657 KJ/kgK. molar mass of gas will be
a)   40 kg/kmol
b)   44 kg/kmol
c)   48 kg/kmol
d)   38 kg/kmol

163. Thermodynamics properties that are independent of size of system are called
a)   Intrinsic Properties
b)   Extrinsic Properties
c)   Open Properties
d)   Close Properties

164. Change of entropy depends upon
a)   Initial states
b)   End States
c)   Process between end states
d)   None of these

165. Heat and work are
a)   Transitory Energies

b)   Intrinsic Energies
c)   Extrinsic Energies
d)   Internal Energies

166. Mixture of liquid and dry vapor is known as
a)   Wet vapor
b)   Dry Vapor
c)   Transition Vapor
d)   None of these

167. Maximum amount of work that can be obtained from a system at constant temperature and pressure is called
a)   Exergy
b)   Reversibility
c)   Capacity
d)   None of these

168. Entropy of process remains constant, if process is
a)   Irreversible
b)   Isobaric
c)   Reversible
d)   Isochoric

169. Mass of liquid vapor in 1 kg of mixture
a)   Vapor fraction
b)   Dryness fraction
c)   Wetness fraction
d)   Mixture fraction

170. Volume occupied by unit mass of a system called
a)   Total Volume
b)   Minimum Volume
c)   Specific Volume
d)   None of these

171. The recovery period of a local cold injury is characterized by
a) rejection of blisters and fibrin;
b) development of contractures;
c) marginal epithelialization;
d) the appearance of bubbles;

172. The following clinical manifestations are characteristic of the recovery period of general cold injury
a) normalization of blood pressure;
b) normalization of kidney function;
c) memory impairment;
d) the development of cerebral edema;

173. To measure the internal temperature of the body, it is advisable to carry out
a) with a galactic thermometer;
b) a mechanical thermometer;
c) electronic thermometer;
d) An infrared thermometer.

174. Human freezing develops when the body temperature drops below
a) 36°C;
b) 34 ° C;
c) 35°C;
d) 34.5°C;

175. What type of cooling occurs only under the action of air, when the body is protected by clothing?
a) an ultra-acute type of general cold injury;
b) a chronic type of general cold injury;
c) acute type of general cold injury;
d) acute type of local cold injury.

176. The classic type of frostbite is considered to develop when
a) the action of dry cold air;
b) prolonged chronic exposure to moderate temperatures;
c) prolonged cooling in a humid environment;
d) prolonged effect of cold water on the body.
177. The method of controlled reduction of body temperature or part of it is called
a) secondary hypothermia;
b) primary hypothermia;
c) controlled hypothermia;
d) unintentional hypothermia.
178. General cold injury is divided into severity
a) soporose;
b) clinical death;
c) adynamic;
d) undulating;
179. Heat transfer processes, all other things being equal, are primarily affected
a) urinary system;
b) respiratory system;
c) the nervous system;
d) the skin;
180. Circulatory arrest occurs at temperatures below
a) 23 ° C;
b) 25°C;
c) 28°C;
d) 34°C;
181. Assessment of the depth of frostbite is possible
a) after full warming;
b) when the general symptoms are added;
c) when the color of the skin changes;
d) when bubbles appear;
182. Paralysis of the respiratory center may develop at a temperature of
a) 30-31°C;
b) 28-29°C;
c) 32-33°C;
d) 26-27 °C.
183. At what skin temperature does the blood flow in the veins stop?
a) 2-3 ° C;
b) 13-15°C;
c) 4-8 ° C;
d) 9-12°C;
184. With any degree of frostbite
a) vascular anastomoses develop rapidly;
b) primary cell necrosis develops;
c) disseminated necrosis develops;
d) the rheological properties of blood change;
185. With proper warming, the victims have
a) an increase in internal body temperature at a rate of 1 ° C in 30-60 minutes;
b) restoration of diuresis of at least 1 ml / kg hour and an increase in internal body temperature above 35 ° C 20-30 minutes after the start of warming;
c) restoration of diuresis of at least 1 ml / kg per hour;+
d) an increase in internal body temperature at a rate of 0.5 ° C in 30-60 minutes;
186. With a decrease in body temperature to 32-28 ° C, there is
a) increased blood pressure;
b) stiffness of movement in the joints;+c) abdominal muscle tension;
d) trembling;

187. With a decrease in body temperature to 35-32 ° C, there is
a) trembling;
b) abdominal muscle tension;
c) lack of consciousness;
d) rare breathing.

188. When the body temperature drops below 28 ° C, there is
a) rare breathing;
b) increased blood pressure;
c) lack of consciousness;
d) trembling;

189. A decrease in blood flow rate is observed at a temperature of
a) 25°C;
b) 23 ° C;
c) 29°C;
d) 32°C;

190. The recovery period of local cold injury continues
a) after warming the tissues and before restoring blood circulation, it lasts 12-48 hours;
b) from 3 days and lasts until 5-15 days;
c) from the moment the temperature of the tissues decreases under the influence of low temperature to the beginning of warming of the tissues;
d) from 5-15 days until the complete restoration of the skin;

191. Active transport is the transfer of molecules:
a) along the concentration gradient due to the energy of ATP hydrolysis
b) against the concentration gradient due to the energy of ATP hydrolysis
c) against the concentration gradient using translocases
d) along the concentration gradient using translocases

192. Na$^+$/ K$^+$-ATPses provide conjugation of ATP hydrolysis:
a) with the transport of Na$^+$ and K$^+$ into the cell
b) with the transport of 2 K$^+$ ions into the cell and simultaneous excretion of 3 Na$^+$ ions from the cell
c) with the removal of Na$^+$ and K$^+$ from the cell
d) with transport to the Na$^+$ cell and simultaneous removal of K$^+$ from the cell

193. The external plasma membrane performs the following functions:
a) restriction of intracellular contents from the external environment and division of the cellular department into compartments+
b) regulatory function+
c) participates in the synthesis of a number of compounds+
d) ensuring intercellular contacts, including immune contacts+

194. The lipid layer of membranes:
a) formed by a single layer of phospholipids
b) it is formed by a double layer of phospholipids with the inclusion of cholesterol+
c) proteins are loosely bound to lipids and can move+
d) lipids affect the activity of membrane enzymes+

195. Glycolipids of the membrane:
a) participate in the creation of intercellular contacts+
b) have catalytic properties
c) participate in the formation of antigenic determinants of cells+
d) provide elastic properties of the membrane

196. Membrane proteins:
a) are involved in the transport of ions and other charged molecules through the membrane+
b) are part of cellular receptors+
c) have catalytic properties+
d) perform a formative and supporting function+

197. Establish strict compliance

Type of transport through the membrane:	Mechanism:
1. passive uniport 2. passive symptom 3. Passive antiport	a) transport of two substances along a concentration gradient in one direction b) transport of two substances through the membrane in opposite directions c) transport of substances through the membrane against a concentration gradient with the expenditure of ATP d) transport of one hydrophilic substance by translocase from one side of the membrane to the other

198. Passive transport:
a) requires energy costs to transport the substance along
the concentration gradient
b) does not require energy costs to diffuse the substance against
the concentration gradient
c) does not require energy costs to diffuse the substance along
the concentration gradient+
d) the transported substance forms a complex with the carrier and
is transported without energy costs along the concentration gradient

200. Active transport:
a) requires energy expenditure for the transfer of a substance along
a concentration gradient
b) requires energy expenditure for the transfer of a substance against
a concentration gradient
c) is carried out using lyases
d) is carried out using transport ATP-az

201. Mode of transport Mechanism
1) active a) simple diffusion
2) passive b) facilitated diffusion
c) transport against
a concentration gradient involving ATP-az
d) endocytosis and exocytosis

202. Polyunsaturated fatty acids in the composition of membrane lipids:
a) increase membrane fluidity
b) increase the viscosity of the membrane
c) are precursors of eicosanoids
d) interact with hydrophobic radicals of proteins

203. The lipid components of the membrane are:
a) glycerophospholipids
b) sphingophospholipids
c) glycophorins
d) cholesterol

204. Establish strict compliance:

The name of membrane proteins:	Functions of membrane proteins:
1) glycophorin 2) spectrin 3) Integral protein of band 3 4) porin	a) an integral protein of erythrocyte membranes, provides antigenic determinants of blood groups b) provides transport of Cl- and HCO3 through the erythrocyte membrane

	c) the main protein of the erythrocyte cytoskeleton, ensures its plasticity
	d) membrane protein involved in the formation of channels
	e) involved in the transport of O_2

205. The regulatory functions of the membrane are realized by signaling molecules due to:
a) formation of secondary intermediaries
b) induction of protein synthesis
c) changes in membrane permeability
d) changes in the activity of membrane enzymes

206. Establish compliance
(for each question - one or more correct answers, each answer can be used once)

Localization in a cell	Biochemical processes or enzymes
1. cytoplasm 2. mitochondria 3. the membrane	a) thiolase (β-oxidation of VFA) b) LDH (glycolysis) c) enoyl reductase (synthesis of fatty acids) d) citrate synthase (CTC) e) glu-6-FDG (pentose cycle) f) adenylate cyclase

207. ECG (Electrocardiogram) was developed first by
a) Wilhelm His
b) Steward
c) Hubert Mann
d) Willem Einthoven

208. This is the classic ECG change in MI (myocardial infarction)
a) ST-segment elevation
b) T-wave inversion
c) Development of an abnormal Q wave
d) All of these

209. In which of these conditions can widen QRS and Tall-tented T waves be observed?
a) Hyponatremia
b) Hyperkalemia
c) Hyperglycemia
d) Hyperphosphatemia

210. Hypokalemia is the condition of low potassium levels in your blood. Hypokalemia ECG changes are observed by
a) ST segment elevation
b) U wave (a position deflection after the T wave)
c) Tall peaked T waves
d) Widening of the QRS complex and increased amplitude

211. A normal ECG report must consist of the following information
a) Rhythm, cardiac axis
b) Conduction intervals
c) Description of the ST segments, QRS complexes, T-waves
d) All of these

212. For the normal heartbeat, depolarization stimulus originates in
a) His-bundle areas
b) Epicardium
c) Sinoatrial (SA)node
d) Atrioventricular (AV) node

213. The characteristics – slurring of the initial QRS deflection, shortened PR interval, and prolonged QRS duration are of this condition
a) Atrial tachycardia

b) Left bundle branch block
c) WPW (Wolff-Parkinson-White) syndrome
d) Myocardial ischemia

214. P wave indicates
a) Depolarization of right ventricle
b) Depolarization of left ventricle
c) Depolarization of both atria
d) Atria to ventricular conduction time

215. Ventricular muscle depolarization is indicated by
a) PR interval
b) P wave
c) U wave
d) The QRS complex

216. ECG identified by the PR interval tends to become longer with every succeeding ECG complex until there is a P wave not followed by a QRS is observed in
a) Third-Degree Atrioventricular Block
b) Second-Degree Atrioventricular Block, Type II
c) Second-Degree Atrioventricular Block, Type I
d) First-Degree Atrioventricular Block, Type II

217. Mention the Full form of ECG?
a)   Electro cardio Group
b)   Electrocardiogram
c)   Electrocardium Granules
d)   Electricity Cardiac Group

218. How Many Electrodes are connected to a patient to measure ECG?
a)   Two
b)   One
c)   Four
d)   Three

219. Mention the Full Form of CAD?
a)   Carotid Artery Disorder
b)   Carotid Artery Disease
c)   Coronary Artery Disease
d)   Coronary Angina Disorder

220. Among these which waves represent the excitation of the atria?
a)   T-Wave
b)   P-Wave
c)   QRS Complex
d)   ST-Segment

221. Which of the following shows the depolarisation of the Ventricles?
a)   T-Wave
b)   P-Wave
c)   QRS Wave
d)   PQ Interval

222. The Heartbeat of a person can be measured by counting the number of Which wave?
a)   QRS Complex
b)   T-Wave
c)   P-Wave
d)   PQ-Wave

223. Determine that among the following which represent the enlargement of auricles?
a)   Enlargement of P-Wave
b)   Depression of ST Segment
c)   Enlargement of QR Statement
d)   Elevation of ST segment

224. What Does the Depression of ST-Segment Depict?

a) Hypokalemia
b) Ischemia
c) Acute Heart Attack
d) Myocardial Attack

225. Name the muscle which has the longest refractory Period?
a) Smooth Muscles
b) Cardiac Muscles
c) Facial Muscles
d) Skeletal Muscles

226. Mention the Main Symptoms of Heart Failure?
a) Vomiting
b) Lung Congestion
c) Pain in the chest
d) Yellowing of Eyes

227. The placement of the sensors on the cranium in order to take EEG is called _____
a) Montage
b) Cranial Cap
c) Electrode Placement
d) Electrode Cap

228. The electrode gel is used to _____
a) reduce skin resistance
b) increase skin resistance
c) moisturize the skin
d) cause skin flaking

229. When a person moves his arms and legs, the EEG is generated from _____
a) Temporal Lobe
b) Parietal Lobe
c) Occipital Lobe
d) Frontal Lobe

230. Which of the following conditions will give slow waves with high amplitude?
a) Hypoglycemia
b) Hypothermia
c) Hypocapnia
d) Low Glucocorticoids

231. Which of the following processes will cause desynchronization?
i. Thinking.   ii. Snoring.   iii Mathematical Calculation
iv. Eye opening after sleep   v. Sleeping.   vi. Clapping   viiSneezing
a) iii, iv & vi
b) i, ii, iii, iv, v, vi & vii
c) i & iv
d) ii, vi, & vii

232. Sleep spindles are found _____ of the sleep.
a) first phase
b) second phase
c) third phase
d) fourth phase

233. Abnormal sleep spindles can indicate _____
a) Cerebral Palsy
b) Meningitis
c) Epilepsy
d) Paralysis

234. Which wave can help point out the place of a brain tumor?
a) Alpha waves
b) Beta waves

c) Delta waves

d) Gamma waves

235. The frequency of the waves acquired when the person is in an alert and wakeful state is _____

a) 4 – 8 Hz

b) 8 – 13 Hz

c) 13 – 30 Hz

d) > 30 Hz

236. EEG is the recording of the _____

a) signal from axons of the pyramidal cells

b) signal from the dendrites of the pyramidal cells

c) cyton secretions

d) axon secretions

237. When an EEG is taken from the Occipital Region of the brain, what signal will cause the maximum amount of noise?

a) EOG

b) EMG

c) ECG

d) EEG from other parts of the brain

238. Certain natural processes interrupt the normal alpha waves. This process is called as alpha block or _____

a) disruption

b) beta introduction

c) asynchronization

d) desynchronization

239. Narcolepsy is a condition in which a person has excessive sleepiness during daytime as they are unable to regulate t   their sleep cycle. It's a neurological disorder and can be traced with the help of an EEG. What kind of EEG can be expected in this kind of disorder?

a) Alpha waves with short bursts of Beta waves

b) Alpha Waves with short burst of Gamma waves

c) Alpha Waves with short bursts of sleep spindles

d) Continuous alpha waves

240. An EEG for seizure is characterized by _____

a) low amplitude, high frequency waves

b) high amplitude, low frequency waves

c) high amplitude, high frequency waves

d) low amplitude, low frequency waves

241. What is the term used for portable EEG?

a) Travel EEG

b) Ambulatory EEG

c) Personalized EEG

d) Transport EEG

242. The following is the diagrammatic representation of _____ montage.

a) 10 – 20 %

b) 20 – 40 %

c) 40 – 60 %

d) 60 – 80 %
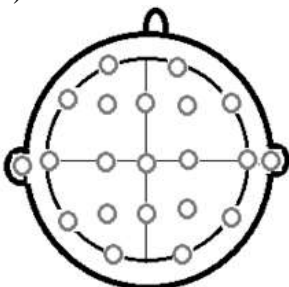
243. According to the international 10/20 system to measure EEG, even number denotes which side of the brain?

a) left
b) top
c) bottom
d) right

244. Letter F in the EEG electrode placement system denotes?

a) front
b) face
c) frontal lobe
d) fast

245. Normal EEG frequency range is _____

a) 50-500Hz
b) 0.5-50HZ
c) 0.05-5Hz
d) 1-200Hz

246. The letter T in the EEG electrode placement system denotes?

a) temporal lope
b) temper lobe
c) trace
d) timpanic

247. For what all purposes is diathermy principal used?

a) Surgical and Therapeutic
b) Therapeutic and Diagnostic
c) Diagnostic and surgical
d) Diagnostic and rehabilitative

248. What surgical functions are performed by the diathermy machine?

a) cutting, coagulation, fulguration
b) cutting, fulguration
c) cutting, coagulation
d) coagulation, fulguration

249. The types of therapeutic diathermy machines that exist are _____

a) Short wave, micro wave and ultrasound
b) Short wave, ultrasound and cold compress
c) Cold compress, microwave and electrical impulse
d) Electrical impulse, microwave and ultrasound

250. Which of the diathermy machine is good for deep tissue healing?

a) short wave
b) ultrasound
c) cold compress
d) electrical impulse

251. What is the frequency range of the sound used for ultrasound diathermy?

a) 0.1 – 0.7 MHz
b) 0.7 – 3.3 MHz
c) 3.3 – 5 MHz
d) 5 – 15 MHz

252. What precaution is used in diathermy?

a) the patient is made to lie on a soft pillow
b) pads are used for grounding and completing the circuit
c) the patient is made to drink a large number of fluids
d) wooden blocks are used for grounding

253. In heat wave diathermy, the maximum power given out is 500 W and the maximum voltage possible is 4000V. Thus, what is the highest resistance that heat wave diathermy machine can deal with?

a) 3.2 K ohm

b) 32 K ohm
c) 320 K ohm
d) 3200 K ohm

254. Which of the following is used to measure the biological damage caused by radiation?
a) Curie
b) Rem
c) Rad
d) Roentgens

255. Beyond what dose is the cerebral system shows signs of failure?
a) 25 – 200 rad
b) 200 – 600 rad
c) 600 – 1000 rad
d) > 1000 rad

256. What is the relation between 1 Rad, 1 Rem and 1 R?
a) 1 Rad ≈ 1.5 Rem ≈ 1000 R
b) 1 Rad ≈ 10 Rem ≈ 1.8 R
c) 1 Rad ≈ 1 Rem ≈ 1 R
d) 1 Rad ≈ 10 Rem ≈ 100 R

257. The two known units of radioactivity and the relation between the two are _____
a) Curie and Becquerel 1 Ci = 3.7 x 1010 Bq
b) Curie and Becquerel 1 Bq = 3.7 x 1010 Ci
c) Curie and Roentgens 1 Ci = 1000 R
d) Roentgen and Becquerel 1 R = 1000 Bq

258. In a hypothetical radioactive material, the total number of active photons are 20000 and the decay constant is found out to be 4.916×10^{-17} per second. How much of the material will be left in a 100 years? (1 year = 365 days. Leap year is not assumed in the calculations)
a) 1589.99999
b) 19,999.9999
c) 19.999999
d) 123.99999

259. If the half life is found to be 100 msec, what is the decay constant?
a) 693 per second
b) 24948 per hour
c) 0.1155 per minute
d) 59875.2 per day

260. With what energy must the radiation be given to image a bone of thickness 5 cm which has covering of skin of thickness of 2 cm on the both sides and the emerging intensity of the X – Ray is 200MeV. (impedance for bone = b for skin = s)
a) $2000e^9$
b) $200e^{(4s + 5b)}$
c) 20/e
d) 2e

261. In the induction field diathermy, the heating effects are done by
a) Using magnetic field
b) Induce an electrical current within body parts
c) Using an electric field
d) Made of metal that is shaped into a coil

262. A low dielectric constant & conductivity is to
a) High water content, muscle nerve, blood vessels, internal organs & moist skin
b) Low water content, bone, capsule, ligaments, fat, dry skin
c) All of the above

263. A high dielectric constant & conductivity is to
a) High water content, muscle nerve, blood vessels, internal organs & moist skin
b) Low water content, bone, capsule, ligaments, fat, dry skin
c) All of the above

264. The electric field will
a) Converge onto substance with high dielectric constant
b) Converge onto substance with low dielectric constant
c) Diverge within substances with high dielectric constant
d) Diverge within substances with low dielectric constant

265. The process of destroying cancer cells with the help of radiation is _____
a) radiotherapy
b) physiotherapy
c) uroplasty
d) rehabilitation

266. Which of the following pair of scattering is important for diagnostic purposes?
a) Coherent and Compton
b) Photoelectric and Pair Production
c) Compton and Photoelectric
d) Pair Production and Disintegration

267. Dorsonvalisation is based on ……
a) alternating current of low frequency
b) alternating current of highfrequency
c) steady current
d) only frequency

268. strength of current in Dorsonvalisation.
a) 10-15 A
b) 10-15 mA
c) 100-150 A
d) 1-10 A

269. Range of frequency used in Dorsonvalisation.
a) 1-5 Hz
b) 160-400 KHz
c) 200-400 Hz
d) 16-40 Hz

270. Tension in Dorsonvalisation…..
a) 10-100 KHz
b) 1-10 Hz
c)10-100 Hz
 d) none of the above

271. Dorsonvalisation is not based on …..
a) small strength of current
b) high tension
c) alternating current
d) low frequency

272. in dorsonvalisation bactericidal action
a) Increase
 b) Decrease
c) Stabilize
d) None of the above

273. In Dorsonvalisation Anesthetic Effect is …………
a) Activated
 b) Deactivated
c) Both
d) None of the above

274. Which is not indication of Dorsonvalisation ?
a) Hair fall
b) paradontosis
c) Scars
d) Reino Illness

275. Migrane Is caused In
a) Ultratonetherapy
b) Dorsonvalisation
c) Indoctoterenia
d) All of the above

276. In Dorsonvalisation What Happened
a) Artery Constrict
b) Vein Consrict
c) Artery Dialate
d) Vein diatate

277. What is duration In dorsonlvalisation
a) 2-3 min
b) 30 min
c) 5-15 Min
d) 60 min

278. general dorsonvalisationis used for….
a) Neuresthemia
b) poor sleep
c) some metabolic disease
d) all of the above

279. local dorsonvalisation is used for …….
a) neuragia
b) myalgia
c) headache,vaginismus
 d) all of the above

280. Mode of current used in Dorsonvalisation is….
a) Impulsive +
 b) Continous
c) Discontinous
 d) Depressive

281. Types of electric digit …….
a) quite electric digit
b) Sparking electric digit
c) both
d) none of the above

282. Electrode used in Dorsonvalisation……
(a) 6
b) 8+
c) 10
d) 2

283. Whome did Dorsonvalisation is applied ?
a) child after 7 year
b) child from 1st year
c) child after 5 year
d) child after 18 years

284. Peculiarity of hyperemia in Dorsonvalisation ……….
a) Weak +
b) strong
c) Continuous
d) discontinuous

285. Thermal effect in tissue…..
a) Considerable
b) weak+
c) strong
d) none of the above

286. Vessel tone is normalised in …….
a) ultratonetherapy.
b) diathermy
c) Dorsonvalisation
 d) UHF therapy.

287. Flow of charges in direction of electrons is called
a)   current
b)   electric current
c)   conventional current
d)   photonic current

288. Power of battery in resistor appears as
a)   power consumption
b)   power dissipation
c)   power resistance
d)   both a and b

289. Conversion of temperature into electric voltage is done with
a)   rheostat
b)   resistor
c)   thermistor
d)   rheostat

290. Wire wound variable resistance is known as
a)   capacitor
b)   resistor
c)   diode
d)   rheostat

291. Formula written as $V(^Q/_T)$ is of
a) acceleration
b) work done
c) power
d) velocity

292. Substances that have constant resistance over wide range of voltages are
a)   ohmic
b) non ohmic
c) resistive
d) non resistive

293. A resistor having resistance 6.2Ω is connected across a battery of 5 V by means of a wire of negotiable resistance. Current passes through resistor is 0.4 A. total power produced by battery is
a)   2 W
b)   3 W
c)   5 W
d)   6 W

294. As compare to short wires, long wires have
a)   more resistance
b)   no resistance
c)   less resistance
d)   same resistance

295. Device that disconnects supply automatically if current exceeds normal value is known as
a)   circuit breaker
b)   fuse
c)   cable
d)   capacitor

296. As per Ohm's law, V (potential difference) is equal to
a)   I(current)×R(resistance of the conductors)
b)   I(current)/R(resistance of the conductors)
c)   R(resistance of the conductors)/I(current)

d)   I(current) + R(resistance of the conductors)

297. A Hooke's joint is used to join two shafts which are

a) aligned

b) intersecting

c) parallel

d) none of the mentioned

298. The maximum velocity of the driven shaft of a Hooke's joint is

a) $\omega_1 \cos\alpha$

b) $\omega_1/\cos\alpha$

c) $\omega_1 \sin\alpha$

d) $\omega_1/\sin\alpha$

299. Which of these mechanisms gives an approximately straight line?

a) hart

b) watt

c) peaucellier

d) tchebicheff

300. In an unregulated power supply, if input a.c. voltage increases, the output voltage …….

a)   Increases

b)   Decreases

c)   Remains the same

d)   None of the above