

APPLIED PHYSICS

1. Specific heat is defined as the amount of heat required to
 - a) raise the temperature of a body by 273°C
 - b) change the temperature of a unit mass of a body through 1°C
 - c) change the state of unit mass of a body
 - d) change the temperature of a unit mass of a body through 212°F
2. The volume of gas
 - a) is always independent of pressure
 - b) is proportional to temperature at constant pressure
 - c) is proportional to pressure at constant temperature
 - d) both b) and c)
3. On heating, the viscosity of liquids generally
 - a) decreases
 - b) increases
 - c) remain constant
 - d) it depends upon the liquid
 - e) Viscosity is not defined the liquid.
4. The centripetal force of a body having mass **m** and rotating at a speed of **v** in a circle of radius **r** is given by.
 - a) mvr
 - b) $mr v^2$
 - c) mv^2/r
 - d) mv/r^2
 - e) None of the above.
5. The unit of specific gravity in S.I unit is
 - a) g/cm^3
 - b) kg/m^3
 - c) g/liter
 - d) kg/liter
 - e) None of the above.
6. Four samples of different materials having the same mass were noted to have the following volumes, 5cc, 10cc, 3cc and 19cc. which of them is more dense.
 - a) The one having volume 5cc.
 - b) The one having volume 10cc.
 - c) The one having volume 3cc.
 - d) The one having volume 19cc.

- e) None of the above.
- 7. The density of water is max. at about
 - a) 0 °C
 - b) 2 °C
 - c) 4 °C
 - d) 6 °C
 - e) none of above
- 8. The amount of heat produced when unit mass of a solid fuel is completely burnt in normal condition is called
 - a) Specific heat of fuel.
 - b) Co-efficient of fuel
 - c) Caloric value of fuel.
 - d) none of above
- 9. Running cost of nuclear power plant.
 - a) Is more than a hydal power plant of the same power capacity?
 - b) Is less than a hydal power plant of the same power capacity?
 - c) Is equal than a hydal power plant of the same power capacity.
 - d) May be any one of above depending upon the conditions
 - e) None of above
- 10. Pakistan has a nuclear power plant, presently in running condition at
 - a) Chashma
 - b) Khushab
 - c) Karachi
 - d) Both a) and c)
 - e) None of above
- 11. If water flows at rate of 360 t/h in a pipe having a crossection area of 0.1m², the velocity is
 - a) 360 m/s
 - b) 36 m/s
 - c) 3.6 m/s
 - d) None of above
- 12. One horse power is equal to
 - a) 647 watt
 - b) 467 watt

- c) 746 watt
 - d) 0 watt
 - e) None of above
13. The unit of torque in S.I. unit is
- a) Newton-meter
 - b) Joule
 - c) Newton/meter
 - d) Joule/meter
 - e) None of above
14. The linear speed of a body revolving at 1200 rpm in a circular path of 0.8m radius would be nearest to
- a) 400m/s
 - b) 300 m/s
 - c) 200 m/s
 - d) 100m/s
 - e) 80 m/s
15. The unit of universal gas constant R is
- a) K
 - b) Joule
 - c) M^3
 - d) Joules/mol.K
 - e) None of above
16. When a heavy nucleus breaks into two or more nuclei with release energy, the process is known as
- a) Fusion
 - b) Fission
 - c) Enrichment
 - d) Radiation
 - e) None of above
17. γ -rays have
- a) +ve charge
 - b) -ve charge
 - c) both charges
 - d) any charge depending upon the energy
 - e) no charge
18. An electron is roughly
- a) 1/1840 times of proton

- b) 1840 times of proton
 - c) 1840 times of neutron
 - d) both a) and b)
 - e) both b) and c)
19. When an atom emits a β particle
- a) Its atomic number decreased by unity
 - b) Its atomic number increased by unity
 - c) Its mass number decreased by unity
 - d) Its mass number increased by unity
 - e) None of above
20. A nuclear bomb is more dangerous then an equivalent TNT bomb because
- a) Of more weight
 - b) Of radiation
 - c) Of bad smell
 - d) Both b) and c)
 - e) None of above
21. Which of the following atoms contains least number of neutrons
- a) ${}_{92}\text{U}^{235}$
 - b) ${}_{92}\text{Np}^{240}$
 - c) ${}_{92}\text{U}^{238}$
 - d) ${}_{93}\text{Np}^{239}$
22. ${}_{6}\text{C}^{11}$ and ${}_{5}\text{B}^{11}$ are two
- a) isotopes
 - b) isobars
 - c) isotones
 - d) isomers
 - e) None of above
23. Which of the following is /are real number(s)
- a) 0
 - b) -1
 - c) π
 - d) $\sqrt{5}$
 - e) all of above
24. A quadratic equation has always
- a) Real roots
 - b) Imaginary roots
 - c) Equal roots
 - d) No roots
 - e) None of above

25. Log 124 is
- Greater than 0 and less than 1
 - Greater than 1 and less than 2
 - Greater than 2 and less than 3
 - Greater than 3 and less than 4
 - None of above
26. If we consider the earth to be a sphere of radius 6400 km, its volume will be
- $4\pi(6400)$ Km
 - $3\pi(6400)$ Km
 - $(3/4)\pi(6400)$ Km
 - $(4/3)\pi(6400)$ Km
 - None of above
27. If y is the function of x as given in fig.1 then
- 1
 - 0
 - 1
 - 0.5
 - none of above
28. $\sin^2\theta + \cos^2\theta =$
- 0
 - π
 - 2π
 - 10
 - none of above
29. $x^3 + y^3 =$
- $(x-y)(x^2+xy+y^2)$
 - $(x+y)(x^2-xy+y^2)$
 - $(x+y)(x^2+xy+y^2)$
 - None of above
30. The equation $x + y - 7 = 0$
- A circle
 - A parabola
 - A straight line
 - An arc
 - none of above

31. The slope of the equation $y - x^2 + 7 = 0$ is

- a) -1
- b) +1
- c) 0
- d) $2x$
- e) none of above

32. The max. value of $\sin(0)$ is

- a) 0
- b) 2
- c) 10
- d) none of above

33. The probability to draw a queen from a deck of 52 cards is

- a) 52
- b) 13
- c) 4
- d) 1:3
- e) none of above

34. How many possibilities are there to select a team of three members from 6 players

- a) 2
- b) 3
- c) 10
- d) 20
- e) none of above

35. A bus leaves at 7 o'clock with an average speed of 60 km/h. a car leaves the same station at 9 o'clock with an average speed of 90 km/h. at time will the car catch the bus.

- a) 11 O'clock
- b) 12 O'clock
- c) 1 O'clock
- d) 30 past 1 O'clock
- e) none of above

36. Two charged particles

- a) Always attract each other
- b) Always repel each other

- c) Attract or repel each other, depending upon nature of charges
 - d) Have always no effect on each other
 - e) none of above
37. Oil in the transformer is used for
- a) Lubrication purposes
 - b) Cooling and insulation
 - c) Killing the germs
 - d) All of above
 - e) none of above
38. Load shedding is mainly done to
- a) Store electrical energy for later use
 - b) Increase electrical energy in grid
 - c) Reduce energy losses
 - d) All of above
 - e) none of above
39. How much current(I) will flow after a long time in given circuit
- a) 6A
 - b) 3A
 - c) 2A
 - d) 0A
 - e) none of above
40. In semi conductor the current flows due to
- a) Protons
 - b) Ions
 - c) Neutrons
 - d) All of above
 - e) none of above
41. The power factor of a pure capacitive circuit is
- a) -1
 - b) 0
 - c) +1
 - d) 0.5
 - e) none of above
42. A dry cell only can give
- a) D.C. voltage
 - b) A.C. voltage
 - c) Both a) and b)

- d) Pulsating D.C.
 - e) none of above
43. Diodes is a device which
- a) Covert D.C. to A.C.
 - b) Block A.C. completely
 - c) Allow flow of current in only one direction
 - d) All of above
 - e) none of above
44. Transformer is device, which can
- a) Increase the electrical energy
 - b) Increase the voltage
 - c) Increase the current
 - d) Both b) and c)
 - e) none of above
45. Electrical motors draw----- current during startup
- a) No
 - b) Less
 - c) More
 - d) Rated
 - e) none of above
46. In metallic conductors, current flows due to
- a) Ions
 - b) Protons
 - c) Neutrons
 - d) All of above
 - e) none of above
47. The relation between frequency (f) and time period (T) of a wave
- a) $F = 2T$
 - b) $F = 1/T$
 - c) $T = 2$
 - d) $F = T$
 - e) none of above
48. In domestic wiring, a switch is always placed in
- a) Earth wire
 - b) Neutral wire
 - c) Live wire
 - d) Any of above
 - e) none of above

49. The resistance of copper wire
- a) Increases with increase in temperature
 - b) decreases with increase in temperature
 - c) is independent of temperature
 - d) may increase or decrease with temperature depending upon the length
 - e) none of above
50. The equivalent capacitance across A & B in the given fig is
- a) $8\mu\text{f}$
 - b) $2\mu\text{f}$
 - c) $4\mu\text{f}$
 - d) $16\mu\text{f}$
 - e) none of above
51. The equivalent resistance across A & B in the given fig is
- a) 5
 - b) 22
 - c) 18
 - d) 2
 - e) none of above
52. Choose fourth number of the team of Abbbat. Altam
- a) Akram
 - b) Anwar
 - c) Aman
 - d) Ali
 - e) ijaz
53. Separate the odd number from apple, peach, carrot, mango
- a) Apple
 - b) Peach
 - c) Carrot
 - d) Mango
 - e) none of above
54. Separate the odd number from crow, cow, owl, swan
- a) Crow
 - b) Cow
 - c) Owl
 - d) Swan
 - e) No one is odd
55. Complete the series 18,32,50,72,-----

- a) 100,127
 - b) 98, 128
 - c) 110, 138
 - d) 92, 111
 - e) none of above
56. Atomic mass number is equal to
- a) The number of protons
 - b) The number of neutrons
 - c) The sum of the number of protons and neutrons
 - d) The number of electrons
 - e) none of above
57. A chemical reaction is that in which
- a) Nuclei of atoms are changed
 - b) Only electrons are involved and no change in nuclei
 - c) Both electrons and nuclei are involved
 - d) Only state of matter is changed
 - e) none of above
58. An exothermic chemical reaction is that
- a) In which energy is released
 - b) In which energy is absorbed
 - c) In which energy is neither released nor absorbed which can take place at room temperature
59. The number of electrons in the last shell of oxygen (atomic number is 8) is
- f) 2
 - g) 4
 - h) 6
 - i) 8
 - j) none of above
60. The max. value of pH for any solution is
- a) 1
 - b) 10
 - c) 100
 - d) 1000
 - e) none of above
61. Which of the following is organic compound
- a) Glass

- b) Iron
 - c) Plastic
 - d) Cement
 - e) none of above
62. Identify as chemical change
- a) Burning of wood
 - b) Melting of ice
 - c) Braking of glass
 - d) Both a) and b)
 - e) Both a) and c)
63. Identify as acid
- a) H_3BO_3
 - b) HOH
 - c) CH_3CL
 - d) H_2O_2
 - e) All of above
64. Isotopes are those atoms which
- a) Have same atomic weight and different atomic number
 - b) Have same atomic number and different atomic weight
 - c) Have equal no. of proton and neutron
 - d) Have same valency number
 - e) none of above
65. Periodic table is arranged according to
- a) Mass of electron
 - b) Atomic number of elements
 - c) Color of elements
 - d) Odour of element
 - e) none of above
66. If $x = at + bt^2$ where x is in meter and t in hour, the unit of b will be
- a) m^2/hr
 - b) m/hr^2
 - c) m/hr
 - d) m
 - e) none of above
67. A galvanometer is a device which

- a) Measuring current
 - b) Measuring charge
 - c) Detects current
 - d) none of above
68. A barometer is used to
- a) Measure the pressure of liquids
 - b) Measure the amount of heat
 - c) Measure the atmospheric pressure
 - d) See objects at long distance
 - e) none of above
69. A manometer is used to
- a) Measure the pressure of liquids
 - b) Measure the amount of heat
 - c) Measure the atmospheric pressure
 - d) See objects at long distance
 - e) none of above
70. A calorimeter is a device by which can
- a) Measure the pressure of liquids
 - b) Measure the amount of heat
 - c) Measure the atmospheric pressure
 - d) See objects at long distance
 - e) none of above
71. Light year is unit of
- a) Light intensity
 - b) Very long time
 - c) Weight
 - d) Power
 - e) none of above
72. Megger is used to measure
- a) Voltage
 - b) Current
 - c) Charge
 - d) Power
 - e) none of above

73. $1+1+1$ in binary number equal to

- a) 0
 - b) 1
 - c) 10
 - d) 11
 - e) none of above
74. What is the decimal equivalent to binary 111
- a) 0
 - b) 1
 - c) 10
 - d) 11
 - e) none of above
75. If a binary number then $A + \bar{A} =$
- a) A
 - b) $\bar{A}$
 - c) 0
 - d) 1
 - e) none of above
76. The gauge pressure at the top of K2 is equal to
- a) Equal to zero
 - b) Less than zero
 - c) $>$ zero
 - d) equal to 100 Mpa
 - e) none of above
77. A packet is dropped from an aero plane flying at a constant speed V m/s, the speed of packet just before reaching the ground will be
- a) Greater than v
 - b) Less than v
 - c) Equal to v
 - d) Can be any one of the above depending upon height from the earth
 - e) Can not be compared with given data
78. A body moving at constant velocity has acceleration equal to
- a) 9.81 m/s^2
 - b) -9.81 m/s^2
 - c) $6.67 \times 10^3 \text{ m/s}^2$
 - d) $9.0 \times 10^3 \text{ m/s}^2$
 - e) none of above
79. Power is defined as
- a) Force * distance
 - b) Force/distance

- c) Work * time
- d) Work done per unit time
- e) none of above

80. Which of the following is / are Vector quantity?

- a) Force
- b) Velocity
- c) Weight
- d) All of above

81. The hardest substance known is

- a) Gold
- b) Diamond
- c) Tungsten
- d) Platinum
- e) none of above

82. The dot product of two rectangular components of a vector is

- a) equal to the vector itself
- b) equal to the square of the vector
- c) equal to half of vector
- d) none of above

83. Density of a body is defined as

- a) mass per unit area
- b) volume per unit area
- c) area per unit volume
- d) mass per unit volume
- e) none of above

84. A heavy and light body having equal kinetic energies, which one has greater momentum?

- a) Heavy body
- b) Light body
- c) Both have same momentum
- d) No one has momentum
- e) It can not be ascertained from the given data

85. If the density of the earth were double of the present, the value of gravitational acceleration g would be

- a) Same as present
- b) Double of present

- c) Half of present
- d) Four times of present
- e) none of above

86. Which substance is the most elastic?

- a) Rubber
- b) Brass
- c) Glass
- d) Steel
- e) none of above

87. Efficiency of a practical machine is always

- a) equal to 100
- b) > 100
- c) < 100
- d) equal to zero
- e) none of above

88. The S.I. unit of co-efficient of linear expansion is

- a) $\text{m/ } ^\circ\text{C}$
- b) $^\circ\text{C/m}$
- c) M
- d) $^\circ\text{C}$
- e) none of above

89. One mole of H_2 and one mole of O_2 at same temperature and pressure contain

- a) have same mass
- b) have same volume
- c) have same number of molecules
- d) both a) and b)
- e) both b) and c)

90. Conduction heat transfer through a body depends upon

- a) area of body
- b) thickness of body
- c) length of body
- d) all of above
- e) none of above

91. First law of thermodynamics is described by

- a) $\Delta Q = \Delta W + \Delta U$
- b) $\Delta W = \Delta Q + \Delta U$
- c) $\Delta U = \Delta Q + \Delta W$

- d) all of above
- e) none of above

92. The heat reaches to a man sitting nearby fire through

- a) conduction
- b) radiation
- c) convection
- d) all of above
- e) both a) and b)

93. The boiling point of water at siachin will be

- a) Equal to Karachi
- b) Greater than Karachi
- c) Less than Karachi
- d) It depends upon the surrounding temperature
- e) none of above

94. The Celsius degree ($^{\circ}\text{C}$) is

- a) $> ^{\circ}\text{F}$
- b) $< ^{\circ}\text{F}$
- c) $= ^{\circ}\text{F}$
- d) Celsius and Fahrenheit are one and same
- e) No direct relation between the above

95. Thermometer directly tell us about

- a) The amount of heat in body
- b) The degree of hotness or coldness of the body
- c) The difference of temperature from the environment
- d) All of above
- e) none of above

96. RTD is an instrument to measure

- a) flow
- b) temperature
- c) resistance
- d) pH
- e) none of above

1. A bomber drops a bomb from an aircraft flying at 2000Km/h with an altitude of 7 Km . The speed at which the bomb will strike the earth would be.

- a) Greater than 2000Km/h
- b) Less than 2000 Km/h

- c) Equal to 2000 Km/h
 - d) Can not compare with the given data
2. The velocity of a body was noted to be a constant during 5 minutes of its motion. What was its acceleration during this interval?
- a) 9.81 m/s^2
 - b) -9.81 m/s^2
 - c) $6.67 \times 10^2 \text{ m/s}^2$
 - d) 0
3. Which of the following is / are Vector quantity?
- f) Force
 - g) Velocity
 - h) Weight
 - i) All of above
4. If V_1 and V_2 be two vectors at 90° from each other, having magnitudes of 10 and 20 units each. What will be the value of $V_1 \cdot V_2$.
- a) Equal to 200
 - b) Equal to 10
 - c) Equal to 20
 - d) Equal to 0
5. Four samples of different materials having the same mass were noted to have the following volumes, 5cc, 10cc, 3cc and 19cc. which of them is more dense.
- f) The one having volume 5cc.
 - g) The one having volume 10cc.
 - h) The one having volume 3cc.
 - i) The one having volume 19cc.
6. The centripetal force of a body having mass m and rotating at a speed of v in a circle of radius r is given by.
- f) mvr
 - g) mv^2
 - h) mv^2/r
 - i) mv/r^2
7. The unit of specific gravity in S.I unit is
- f) g/cm^3
 - g) kg/m^3
 - h) g/liter
 - i) kg/liter
8. Temperature of 100°C is equal to

- a) 100 °F
- b) 212 °F
- c) 112 °F
- d) 5 °F

9. Specific heat is defined as the amount of heat required to
- e) raise the temperature of a body by 273 °C
 - f) change the temperature of a unit mass of a body through 1°C
 - g) change the state of unit mass of a body
 - h) change the temperature of a unit mass of a body through 212 °F
10. The volume of gas
- a) is always independent of pressure
 - b) is proportional to temperature at constant pressure
 - c) is proportional to pressure at constant temperature
 - d) both b) and c)
11. On heating, the viscosity of liquids generally
- f) decreases
 - g) increases
 - h) remain constant
 - i) it depends upon the liquid
12. A chemical compound having only carbon and hydrogen is called
- a) sulfuric acid
 - b) hydrocarbon
 - c) hydride
 - d) all of above
13. Which of the following is / are Halogens
- a) chlorine
 - b) iodine
 - c) bromine
 - d) all of above
14. Atomic no. of an atom is the no. of
- a) protons
 - b) electrons
 - c) neutrons
 - d) protons or electrons
15. Atmosphere pressure is equal to
- a) 14.7 psi
 - b) 760 mm of Hg

- c) none of above
 - d) a) and b)
16. Boiling point of water decreases due to
- a) decrease in pressure
 - b) increase in pressure
 - c) both A) and b)
 - d) none of the above
17. Cane sugar is mainly composed of
- a) sucrose
 - b) sodium chloride
 - c) iodine
 - d) none of above
18. Which of the following is / are Vector quantity.
- a) Acceleration
 - b) Velocity
 - c) Force
 - d) All of above
19. If a body fall free under gravity, the gravitational acceleration will be equal to
- a) 9.8 m/s^2
 - b) -9.8 m/s^2
 - c) -8.9 m/s^2
 - d) none of above
20. Multistage centrifugal pump are used to give
- a) high discharge
 - b) high head
 - c) all of above
 - d) none of above
21. The temperature at which the volume of the gas theoretically become zero is called
- a) absolute zero
 - b) absolute zero temperature
 - c) freezing point

- d) boiling point
22. A vessel used for producing steam is called.
- Turbine
 - Boiler
 - Condenser
 - Steam ejector
23. $(a + 2b)^2 =$
- $a^2 + b^2 + 2ab$
 - $a^2 + 4b^2 + 8ab$
 - $a^2 + 4b^2 + 4ab$
 - $a^2 + b^2 - 4ab$
24. if A and B be two matrices such that $A =$ _____ and $B =$ _____
the " $A^{-1} = B$ "
- the statement is false because inverse of 3×2 matrix is not possible
 - the statement is false because A^{-1} has some other value than the given above
 - the statement may be false or true depending upon the values of a,b and x,y
 - the statement is true
 - none of above
25. A swimmer can swim with an average speed of 9 km/h in still water. What would be his net speed, if he crossing a river flowing at 20 km/h. trying in swim straight along the breadth of the river.
- about 22 Km/h
 - exactly 20 Km/h
 - about 18 Km/h
 - none of above
26. Two 200 W bulbs have been connected in series with each other. What would be the power of each bulb now?
- 100 W
 - 200 W
 - 50 W
 - 400 W
 - none of the above
27. The unit of **solid angle** is
- solid angle
 - radian

- c) sic radian
 - d) candela
 - e) none of above
28. LPG stands for
- a) Liquid petroleum gas
 - b) Low performance gas
 - c) None of above
29. A speaks truth in 75 percent cases. Bin 80 percent of the cases. In what percentage of cases they likely to contradict each other in narrating same incident.
- a) 35%
 - b) 10%
 - c) 25%
 - d) 45%
 - e) none of above
30. A moving coil galvanometer can be used as an ammeter by adding.
- a) A series resistance with its coil
 - b) a parallel resistance with its coil
 - c) a diode in series with its coil
 - d) a diode with parallel with its coil
31. Thermal parameters can measured by
- a) RTD
 - b) Thermocouple
 - c) Bi-metallic strip
 - d) All of above
32. The working of thermocouple is based upon the principle called
- a) See back effect
 - b) Newton's law
 - c) Thomson effect
 - d) Photoelectric effect
33. For a liquid flowing through a tube, Bernoulli's theorem at a point states that.
- a) Sum of pressure energy, P.E. and K.E are constant
 - b) Sum of pressure energy, P.E. and K.E are variable
 - c) P.E. and K.E are constant only
 - d) None of above
34. The range of temperature on Kelvin scale can be
- a) -273° to 273°
 - b) 0° to 373°
 - c) 0° to 273°

d) -100° to 100°

35. Vacuum can be measured with the help of a

- a) pyrometer
- b) strip meter
- c) induction meter
- d) Borden gauge

36. Electromagnetic induction principle is employed in

- a) moving coil instrumentation
- b) Borden tube
- c) aneroid barometer
- d) flow venture

37. A galvanometer can be converted into a voltmeter by placing

- a) shunt resistance with its coil
- b) series resistance with its coil
- c) voltage can directly be measured
- d) voltage can not be measured with the help of a galvanometer

38. A Geiger-Muller tube is used for

- a) flow rate measurement of gases
- b) flow rate measurement of volatile liquid
- c) measurement of very high voltage
- d) detection of ionizing radiation

39. The arrangement of resistances (r_1, r_2, r_3, r_4) and a galvanometer (g) in figure is called.

- a) Kickoff's apparatus
- b) Wheatstone bridge
- c) Wheat maible bridge
- d) voltammeter

1. b

2. b

3. a

4. c

5. e

6. c

7. c

8. c
9. a
10. d
11. d
12. c
13. a
14. d
15. d
16. b
17. e
18. a
19. b
20. b
21. a
22. b
23. e
24. e
25. c
26. d
27. b
28. b
29. b
30. c
31. d
32. a
33. c
34. d
35. c
36. c
37. b
38. c
39. d
40. e
41. b
42. a
43. c
44. b
45. c
46. e
47. b

48. c
49. a
50. e
51. e
52. d
53. c
54. b
55. b
56. c
57. b
58. a
59. h (6)
60. e
61. c
62. a
63. a
64. b
65. b
66. b
67. c
68. c
69. a
70. b
71. e
72. e
73. d
74. e
75. d
76. b
77. a
78. d
79. d
80. d
81. b
82. d
83. d
84. a
85. b
86. d
87. c

- 88. e
- 89. c
- 90. d
- 91. a
- 92. d
- 93. c
- 94. a
- 95. b
- 96. b

Additional set (final block of 39 questions)

- 1. a
- 2. d
- 3. i (All of above)
- 4. d
- 5. h
- 6. h
- 7. g
- 8. b
- 9. f
- 10. b
- 11. f
- 12. b
- 13. d
- 14. a
- 15. d
- 16. a
- 17. a
- 18. d
- 19. a
- 20. b
- 21. a
- 22. b
- 23. c
- 24. a
- 25. c
- 26. c
- 27. c
- 28. a

- 29. a (35% best match)
- 30. b
- 31. d
- 32. a
- 33. a
- 34. b
- 35. d
- 36. d
- 37. b
- 38. d
- 39. b