

# Pavzi Media

## Polycet - 2016

### English Medium

### Model Paper for Physics

1. If 200 cal heat energy is required 40grams of liquid to its gaseous state, then the latent heat of vaporization of it is.....

  - 1) 4 cal/gm
  - 2) **5 cal/gm**
  - 3) 8000 cal/gm
  - 4) 240 cal/gm
2. SI units for latent heat is.....

  - 1) **Joul/kg**
  - 2) Joul /gram
  - 3) Calorie / kg
  - 4) Cal / gram
3. The required heat energy to convert 500 ml of water completely to vapour is .....

  - 1) 27 k cal
  - 2) **270 k cal**
  - 3) 54 k cal
  - 4) 540 k cal
4. Specific heat of ice is.....

  - 1) 50 ca l/gm
  - 2) 0.05 cal/gm
  - 3) 540 cal/gm
  - 4) **0.50 cal/gm**
5. The required heat energy to improve the temperature of 8 grams of ice from  $-10^{\circ}\text{C}$  to  $-5^{\circ}\text{C}$  is

  - 1) **20 cal**
  - 2) 40 cal
  - 3) 80 cal
  - 4) 120 cal
6. Latent heat of fusion of ice is.....

  - 1) **80 cal /gm**
  - 2) 180 cal /gm
  - 3) 800 ca l/gm
  - 4) 540 cal /gm
7. The required energy to melt 10 grams of ice completely into water is.....

  - 1) 10 cal
  - 2) 100 cal
  - 3) **800 cal**
  - 4) Not sure

8. **Humidity is more at.....surroundings.**  
 1) Deserts  
**2) Sea**  
 3) Ponds  
 4) Mountain
9. **Specific heat of Cu is 0.095, iron 0.115, bronze 0.092, water 1.0. which of the above can be quick heated if kept in sunlight with mass**  
 1) Water  
 2) Iron  
**3) Bronze**  
 4) Copper
10. **The linear kinetic energy of the molecules is increased with the heat energy that received then its temperature.....**  
 1) Decreases  
**2) Increases**  
 3) Doesn't change  
 4) Depends on material
11. **The reason for quick hotness of sand is more than the side water in river**  
**1) Specific heat of water is more than sand**  
 2) Specific heat of water is less than sand  
 3) Specific heat of water is equal to sand  
 4) Due to local conditions
12. **Yolk in just boiled egg is hotter than white layer because.....**  
**1) Specific heat of yolk is high**  
 2) Specific heat of white layer is high  
 3) Due to boiling time  
 4) None of the above
13. **If 100ml of water at 60°C is added to 200ml of water at 30°C then the temperature in mixture is....**  
 1) 45°C  
**2) 40°C**  
 3) 50°C  
 4) 20°C
14. **If 20g of ice at 0°C is added to 120 gr, of water at 49°C, then temperature of mixture is.....**  
 1) 40°C  
**2) 42°C**  
 3) 49°C  
 4) 0°C
15. **What mass of ice at 0°C is to be mixed to 10liters of water at 40°C to get 20°C mixture?**  
 1) 5kg  
**2) 10kg**  
 3) 15kg  
 4) 20kg
16. **Two bodies A and B are in contact for the last 5 hours then the heat transfers from**  
 1) A to B  
 2) B to A  
 3) Not sure  
**4) No transfer between them**
17. **Volume of water in a bowl decreases kept under revolving fan because....**  
**1) Evaporation**  
 2) Condensation  
 3) Humidity  
 4) Boiling
18. **Energy of the molecules in a liquid during evaporation.....**  
 1) Increases  
**2) Decreases**  
 3) Rise then fall  
 4) No change
19. **Temperature of system ..... during evaporation**  
**1) Decrease**  
 2) Increase  
 3) Either 1 or 2  
 4) No change
20. **Example for cooling process is .....**  
 1) Boiling

- 2) Dew
- 3) Condensation
- 4) **Evaporation**

21. Opposite to condensation is .....

- 1) Boiling
- 2) Dew
- 3) Condensation
- 4) **Evaporation**

22. Evaporation takes place at.....

- 1) Bottom of the liquid
- 2) Middle of the liquid
- 3) **Surface of the liquid**
- 4) Entire liquid

23. The reason for sweating at Vizag even though it is cooler than Vijayawada is

- 1) Humidity at Vijayawada is high
- 2) **Humidity at Vizag is high**
- 3) Local conditions
- 4) All the above

24. After boiling is started..... takes place

- 1) Change in temperature
- 2) **Change in its state**
- 3) Change in both
- 4) Neither 1 or 2

25. Which of the following is possible?

- 1) **A baths with 130°c water**
- 2) B brings water at 35 °c
- 3) C did an expt with 273 k water
- 4) All the above

26. Evaporation may take place at.....

- 1) 15°c
- 2) 20°c
- 3) 25°c
- 4) **Any temperature**

27. Boiling can be recognized when.....

- 1) **Improvement in temperature of liquid stops**
- 2) Decrease in temperature of liquid stops
- 3) Decrease in temperature of liquid starts
- 4) After vaporization is completed

28. Water boils at..... At 1atm pressure.

- 1) 40°c
- 2) 373°c
- 3) **373k**
- 4) We can't say

29 ..... grams of ice can be melted with the heat converts 1 gram of water to water completely.

- 1) **40g**
- 2) 200g
- 3) 6.75g
- 4) 6.50g

30. Some water and 270g of ice is given same amount of heat. what amount of water can be vapoured by the time of ice melts fully?

- 1) **27gr**
- 2) 40gr
- 3) 108gr
- 4) None of these

31. To solidify the water ..... Is needed

- 1) 0°c
- 2) 1 atm pressure
- 3) **1 and 2**
- 4) 1 or 2

32. Which one is odd among the following?

- 1) Calorie
- 2) **Pascal**
- 3) Kilo calorie
- 4) Joule

33. During the fusion of a solid its temperature

- 1) Increases
- 2) Decreases
- 3) **Remains constant**
- 4) None of these

34. The temperature at which a solid changes into its liquid state is called

- 1) **Fusion point**
- 2) Vaporization point
- 3) Liquification point
- 4) Boiling point

35. The process due to which a gaseous form of a substance changes to liquid state without any fall in temperature is called

- 1) Liquification
- 2) Condensation
- 3) Vapourisation
- 4) **Fusion**

36. The process due to which a liquid changes into a solid state without any fall in temperature is called

- 1) **Freezing**
- 2) Fusion
- 3) Solidification
- 4) Both 1 and 3

37. There is 1gm of steam and 1gm of water at 100°C, then

- 1) **Steam contains more heat energy**
- 2) Water contains more heat energy
- 3) Both steam and water contains same energy
- 4) None of the above

38. A boy records the temperature of ice cream as -2°C, when half of ice cream melts, the temperature of the mixture will be

- 1) **-2°C**
- 2) Less than -2°C
- 3) More than -2°C
- 4) None of the above

39. The heat capacity of a substance is 45cal/°c. the heat required to heat it through 12°C is...

- 1) **450 cal**
- 2) 540 cal
- 3) 440 cal
- 4) 550 cal

40. 200gr of water at 20°C heated to 80°C. if the specific heat of water is 1 cal/gr°C, the heat energy supplied to water is.....

- 1) 1200 cal
- 2) **12000cal**
- 3) 1,20,000 cal
- 4) None of these

41. 75 g of water decreases from 45°C to 25°C. If specific heat of water is 1cal/gm°C, the heat energy released is

- 1) 150 cal
- 2) **300 cal**
- 3) 450 cal
- 4) 600 cal

42. 106.25 cal of heat energy is supplied to a solid of specific heat 0.85 cal/grc, when its temperature rises by 1°C, then mass of solid is.....

- 1) **125g**
- 2) 120g
- 3) 122g
- 4) 127g

43. How much energy is transferred when 1gm of boiling water at 100°C condenses at 100°C water?

- 1) **540cal**
- 2) 340 cal
- 3) 80 cal
- 4) 100 cal

44. Which of the following is a warming process?

- 1) Evaporation
- 2) **Condensation**
- 3) Boiling
- 4) All the above

45. Melting is a process in which solid phase changes to

- 1) **Liquid phase**
- 2) Liquid phase at constant temperature
- 3) Gaseous state
- 4) Any phase

46. Three bodies A, B and C are in thermal equilibrium. The temperature of B is  $45^{\circ}\text{C}$ , then the temperature of C is

- 1)  $45^{\circ}\text{C}$
- 2)  $50^{\circ}\text{C}$
- 3)  $40^{\circ}\text{C}$
- 4) Any temperature

47. The temperature of steel rod is  $330\text{K}$ . Its temperature in  $^{\circ}\text{C}$  is.....

- 1)  $55^{\circ}\text{C}$
- 2)  $57^{\circ}\text{C}$
- 3)  $59^{\circ}\text{C}$
- 4)  $53^{\circ}\text{C}$

48. Specific heat  $S =$

- 1)  $Q/\Delta t$
- 2)  $Q\Delta t$
- 3)  $Q/m \Delta t$
- 4)  $M \Delta t/Q$

49. Boiling point of water at normal atmospheric pressure is.....

- 1)  $0^{\circ}\text{C}$
- 2)  $100^{\circ}\text{C}$
- 3)  $110^{\circ}\text{C}$
- 4)  $-5^{\circ}\text{C}$

50. When ice melts, its temperature

- 1) Remains constant
- 2) Increases
- 3) Decreases
- 4) Can't say

51..... Is a cooling process

- 1) Evaporation
- 2) Condensation
- 3) Boiling
- 4) All of these

52. The angle of reflection is equal to the angle of incidence

- 1) Always
- 2) Sometimes
- 3) Under special conditions
- 4) Never

53. The angle between an incident ray and the plane mirror is  $30^{\circ}\text{C}$ . The total angle between the incident ray and reflected ray will be.....

- 1)  $30^{\circ}\text{C}$
- 2)  $60^{\circ}\text{C}$
- 3)  $90^{\circ}\text{C}$
- 4)  $120^{\circ}\text{C}$

54. Light always selects the path which takes the least time to travel. This was first given by .....

- 1) Fermat
- 2) Newton
- 3) Robert hook
- 4) Huygen is

55. In the following which plays a role in the judging the size of the object in a plane mirror?

- 1) Object size
- 2) Image size
- 3) Angle
- 4) Mirror size

56. The ray of light is incident on a plane mirror makes an angle of  $90^{\circ}\text{C}$  with mirror surface. The angle of reflection for this ray of light will be

- 1)  $45^{\circ}\text{C}$
- 2)  $90^{\circ}\text{C}$
- 3)  $0^{\circ}\text{C}$
- 4)  $60^{\circ}\text{C}$

57. The image of an object formed by a plane mirror is

- 1) Virtual
- 2) Real
- 3) Diminished
- 4) Upside down

58. The figure given below shows the image of a clock as seen in a plane mirror. The correct time is....

- 1) 2:25
- 2) 2:35
- 3) 6:45
- 4) 9:25

59. A man stand 10m in front of a large plane mirror. How far must he walk before he is 5m away from his image?

- 1) 6cm
- 2) **7.5cm**
- 3) 2.5cm
- 4) 5 m

60. A 4cm high object is placed in front of a plane mirror. What is the size of the image of object?

- 1) 2cm
- 2) 8cm
- 3) **4cm**
- 4) 12cm

61. If  $L_i$  is the incidence ray,  $L_r$  is the reflected ray of light. As per laws of reflection

- 1)  $L_i \neq L_r$
- 2)  $L_i > L_r$
- 3)  **$L_i = L_r$**
- 4)  $L_i < L_r$

62. A student observed the image of an object placed in front of a plane mirror. He wrote the properties of the image of an object. Which of the following is wrong?

- 1) Image is virtual and erect
- 2) The size of the image is equal to size of the object
- 3) Image is laterally inverted
- 4) **Distance of the image behind the mirror is greater than the distance of the object from the mirror**

63. The angle of incidence is the angle between

- 1) The incident ray and surface of the mirror
- 2) The reflected ray and surface of the mirror
- 3) **The normal to the surface and incident ray**
- 4) The normal to the surface and reflected ray

64. An object is placed at the center of curvature of a concave mirror. The distance between its image and the pole is ....

- 1) Equal to  $f$
- 2) Between  $f$  and  $2f$
- 3) **Equal to  $2f$**
- 4) Greater than  $2f$

65.  $F=R/2$  is valid

- 1) For convex mirrors only
- 2) For concave mirrors only
- 3) **Both convex and concave mirrors**
- 4) Neither convex nor concave mirrors

66. A ray of light is incident on a concave mirror. If it is parallel to the principal axis, the reflected ray will be....

- 1) **Pass through the focus**
- 2) Pass through 'c'
- 3) Pass through pole
- 4) Retrace its path

67. If an incident ray passes through the center of curvature of a spherical mirror, the reflected will be

- 1) Pass through focus
- 2) Pass through 'c'
- 3) Pass through pole
- 4) **Retrace its path**

68. To get an image larger than the object, one can use

- 1) Convex mirror
- 2) **Concave mirror**
- 3) Plane mirror
- 4) Both convex and concave mirrors

69. In the following which is not the mirror formula?

- 1)  $F=uv/u+v$
- 2)  $1/f=1/u+1/v$
- 3)  **$1/f=1/v-1/u$**
- 4)  $1/f-1/v=1/u$

70. The mirror used to examine the teeth is .....

- 1) **Concave mirror**
- 2) Convex mirror
- 3) Plane mirror
- 4) Both concave and convex mirrors

71. The rear view mirrors in cars and scooters are

- 1) **Convex**
- 2) Concave
- 3) Both 1 & 2
- 4) Plane

72. The mirrors used in the solar devices are...

- 1) **Concave**
- 2) Convex
- 3) Both 1 & 2
- 4) Plane

73. The magnification of mirror is negative, the image is

- 1) Smaller than the object
- 2) Larger than the object
- 3) Erect
- 4) **Inverted**

74. The radius of curvature of a concave mirror is 20cm. What is the focal length of the concave mirror?

- 1) **10cm**
- 2) 20cm
- 3) 5cm
- 4) 2.5cm

75. A student obtains a blurring image of an object on a screen by using a concave mirror. In order to obtain a sharp image on the screen, he will have to shift the mirror

- 1) **Towards the screen**
- 2) Away from the screen
- 3) Either towards or away from the screen depending upon the position of the object
- 4) To a position very far away from the screen

76. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be

- 1) Concave only
- 2) Plane only
- 3) Convex only
- 4) **Either plane or convex**

77. A student wants to obtain an image of the same size as that of an object using a concave mirror. He should place the object.....

- 1) At infinity
- 2) Between F and 2F
- 3) **At the center of curvature**
- 4) Between pole and focus

78. The focal length of a convex mirror is 15cm. Find the radius of curvature.

- 1) **30cm**
- 2) 15cm
- 3) 7.5cm
- 4) 20cm

79. The center of a spherical mirror is called

- .....
- 1) Pole
  - 2) **Radius of curvature**
  - 3) Focus
  - 4) Aperture

80. A diverging mirror is .....

- 1) A plane mirror
- 2) **Convex mirror**
- 3) Concave mirror
- 4) A shaving mirror

81. The relation between R and f is

- 1)  $R=f$
- 2)  **$R=2f$**
- 3)  $R=f/2$
- 4)  $R=3f$

82. If the magnification of a mirror is greater than 1, then the mirror is

- 1) **Concave mirror**
- 2) Convex mirror
- 3) Plane mirror
- 4) None of the above

83. We get diminished image with a concave mirror when the object is placed....

- 1) At F
- 2) Between pole and F
- 3) At C
- 4) **Beyond C**

84. The image is formed by a concave mirror is virtual, erect and magnified. The position of object is

- 1) At F
- 2) Between F and C
- 3) At P
- 4) **Between F and P**

85. Magnification has a plus sign, then the image is .....

- 1) **Virtual and erect**
- 2) Real and erect
- 3) Real and inverted
- 4) At infinity

86. Critical angle of a diamond is .....

- 1)  $24^{\circ}.4'$
- 2)  $244^{\circ}$
- 3)  $24^{\circ}.24'$
- 4) **2 & 3**

87. Units for relative refractive index in SI system are.....

- 1) Cm/radian
- 2) Degrees/ $\sin\theta$
- 3)  $A^{\circ}$
- 4) **No units**

88. ....is used to examine the inner parts of nose, stomach by doctors.

- 1) Stethoscope
- 2) **Endoscope**
- 3) Calidioscope
- 4) Microscope

89.  $n_1=3/8$ ;  $n_2=3/4n_1$  is the refractive index of denser medium then its

Critical angle is .....

- 1)  $0^{\circ}$
- 2)  **$30^{\circ}$**
- 3)  $45^{\circ}$
- 4)  $60^{\circ}$

90. Optical fibers work on .....

- 1) Reflection
- 2) Refraction
- 3) **Total internal reflection**
- 4) Multiple reflections

91. A ray incidents with  $45^{\circ}$  angle on a surface of a slab then it emerges

With an angle.....

- 1)  $90^{\circ}$
- 2)  $30^{\circ}$
- 3)  **$45^{\circ}$**
- 4)  $60^{\circ}$

92. Critical angle of a denser medium is  $25^{\circ}$ . If a ray incidents with the

Same angle  $25^{\circ}$  then angle of refraction is.....

- 1)  $25^{\circ}$
- 2)  $50^{\circ}$
- 3)  **$90^{\circ}$**
- 4)  $12\ 1/2^{\circ}$

93. Refractive index of a medium is  $\sqrt{2}$  then its critical angle is .....

- 1)  $22\ 1/2^{\circ}$
- 2)  **$45^{\circ}$**
- 3)  $67\ 1/2^{\circ}$
- 4) None of these

94. Refractive index of air is 1, if the critical angle is  $30^{\circ}$  then refractive index of glass is....

- 1) 0
- 2) 1
- 3) **2**
- 4) 3

95. Speed of the light in vacuum is 'C' and refractive index is  $3/2$  then speed of light in that medium is....

- 1)  $3c/2$
- 2)  **$2c/3$**
- 3)  $5c/7$
- 4)  $3c/5$

96. Mirages are...

- 1) Virtual image
- 2) Real image
- 3) **Virtual image of sky**
- 4) Secret of nature

97. If velocity of light in a medium is  $2c/5$  then its refractive index is .....

- 1)  $3/5$
- 2)  $5/3$
- 3) **2.5**
- 4) 1.25

98. Which of the following be refractive index of a medium?

- 1)  **$7/5$**
- 2)  $5/7$
- 3) 0.75
- 4) 0.57

99. Shortest distance between incident and emergent rays is .... Of the glass slab.

- 1) Virtual shift
- 2) **Lateral shift**
- 3) Parallel shift



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4) Perpendicular shift

**100. Deviation angle of a light ray due to glass slab is ....**

- 1)  $20^\circ$
- 2)  $40^\circ$
- 3)  $0^\circ$
- 4) None of these

Pavzi