



PHYSICS

AAKASH INSTITUTE ENGLISH

MOCK TEST 16

Example

1. The temperature at which both centigrade and Fahrenheit thermometer will read same temperature is

A. 233.15K

B. 40K

C. 98K

D. -40°C

Answer: D



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2. The temperature at which the fahrenheit reading triple that of celsius scale is

A. $80^{\circ}C$

B. $80^{\circ}F$

C. $\frac{80}{3}^{\circ}F$

D. 273K

Answer: B



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3. The value of coefficient of expansion of material depends upon

A. Length

B. Area

C. Temperature

D. Volume

Answer: C



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4. On centigrade scale the temperature of body increases by 45 degree. The increase in temperature on kelvin scale is

A. 318K

B. 45K

C. 245K

D. 363K

Answer: B



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5. If the temperature of body is increased by 100°C then the percentage decrease in it's density is [if $\gamma = 75 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$]

A. 0.75

B. 0.075

C. 0.0075

D. 0.0008

Answer: B



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6. According to Debye's law the specific heat at extremely low temperatures value with temperature T as

A. T

B. T^2

C. T^3

D. T^4

Answer: C



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7. A rod of aluminium is fixed between two rigid support. If the temperature of rod is increased by $10^{\circ}C$, then the thermal stress on

the rod is (Take $Y=7 \times 10^{10}\text{Pa}$ and $\alpha=2.4 \times 10^{-5}\text{K}^{-1}$)

A. $1.4 \times 10^3 \text{ Pa}$

B. $1.7 \times 10^7 \text{ Pa}$

C. $1.7 \times 10^3 \text{ Pa}$

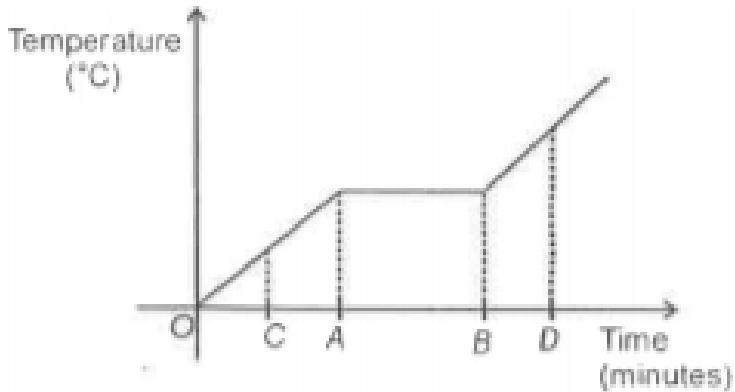
D. $2.4 \times 10^7 \text{ Pa}$

Answer: B



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8. For the following temperature-time graph, in which region the state of material changes



A. OC

B. AB

C. BO

D. CA

Answer: B



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9. The point where all the three state (solid, liquid, vapour) of H_2O exist is known as

- A. Single point
- B. Double point
- C. Triple point
- D. Solid point

Answer: C



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10. On heating the metal rod of length 2m from $0^{\circ}C$ to $50^{\circ}C$, its length is increased by 0.1 cm. the coefficient of linear expansion of metal rod is

A. $2 \cdot 10^{-4} {}^{\circ}C^{-1}$

B. $10^{-4} {}^{\circ}C^{-1}$

C. $1 \cdot 10^{-5} {}^{\circ}C^{-1}$

$$D. 2 \cdot 10^{-5} \text{ } ^\circ C^{-1}$$

Answer: C



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11. The water equivalent of 50g of aluminium

(Specific heat is $0.2 \text{ cal g}^{-1} \text{ } ^\circ C^{-1}$)

A. 10g

B. 5g

C. 20g

D. 40g

Answer: A



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12. 500g of ice at $0^{\circ}C$ is mixed with 1g steam at $100^{\circ}C$. The final temperature of the mixture is

A. $0^{\circ}C$

B. $50^{\circ}C$

C. $40^{\circ}C$

D. $100^{\circ}C$

Answer: A



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13. A pendulum clock consist of aluminium rod connected to a bob. If the temperature of the surrounding becomes double , then the time period of pendulum

A. Decreases

B. Remain same

C. Increases

D. May increase or decrease

Answer: C



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14. The temperature of the sun is measured with

A. Pyro-meter

B. Mercury thermometer

C. gas thermomemter

D. Both (1) and (2)

Answer: A



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15. At $39.2^{\circ}F$, specific volume and density of water are respectively

A. Minimum and maximum

B. Minimum and minimum

C. Maximum and minimum

D. Maximum and maximum

Answer: A



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16. The unit of temperature gradient is

A. $\frac{K}{m}$

B. $\frac{m}{K}$

C. K

D. Km

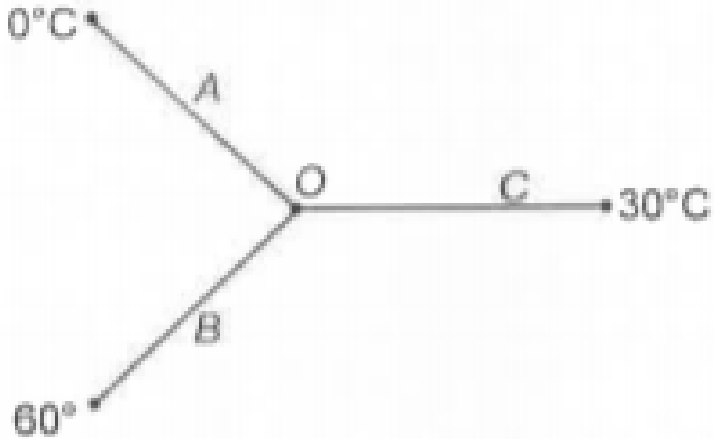
Answer: A



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17. Three identical conductors of same material and dimension A, B and C are fixed at O as shown in figure. The conductor through

which minimum heat flow is



A. A

B. C

C. B

D. All have same heat of flow

Answer: B



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18. Three rods of same dimension are joined in series having thermal conductivity k_1 , k_2 and k_3 . The equivalent thermal conductivity is

A. $k_1 k_2 k_3 / (k_2 k_3 + k_1 k_2 + k_1 k_3)$

B. $3(k_1 k_2 k_3) / (k_2 k_3 + k_1 k_2 + k_1 k_3)$

C. $k_1 + k_2 + k_3$

D. $(k_1 + k_2 + k_3) / 3$

Answer: B



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