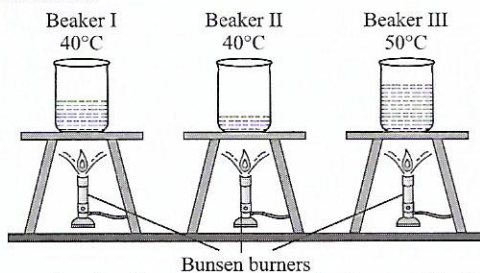


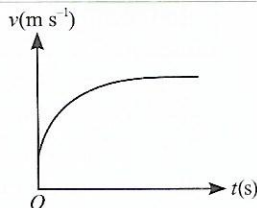
12. A bus driver is reversing his bus at a speed  $8 \text{ m s}^{-1}$ . The rear view mirror of the bus is a plane mirror. The driver sees in his rear view mirror the image of a car parked behind his bus. The speed at which the image of the car appears to approach the driver will be
- A.  $2 \text{ m s}^{-1}$                       B.  $4 \text{ m s}^{-1}$   
 C.  $8 \text{ m s}^{-1}$                       D.  $16 \text{ m s}^{-1}$

13. Three glass beakers of similar sizes are filled with different amounts of water heated to different temperatures.

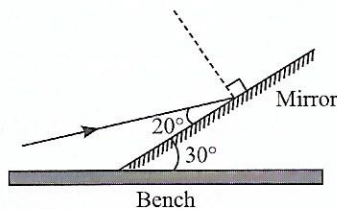


Arrange the beakers in order, starting with the one with the maximum heat.

- A. I, III, II                      B. II, I, III  
 C. III, I, II                      D. III, II, I
14. A speed-time ( $v-t$ ) graph of an object is shown here. Which of the following best describes the graph?
- A. The object drops through vacuum.  
 B. The object drops through air.  
 C. The object is being thrown downwards through vacuum.  
 D. The object is being thrown downwards through air.



15. A mirror is tilted at an angle of  $30^\circ$  to the bench. A ray of light is directed so that it hits the mirror at an angle of  $20^\circ$  to the surface of the mirror.



- What is the angle of reflection?
- A.  $20^\circ$                       B.  $30^\circ$   
 C.  $50^\circ$                       D.  $70^\circ$
16. Considering the following statements and select the correct option which correctly identifies true (T) and false (F).
- I. Artificial magnets are made in different shapes such as horse-shoe magnet, cylindrical magnet, bar magnet and ball-ended magnet.  
 II. When a bar magnet is broken then each of the broken part will have one pole.  
 III. In a bar magnet, magnetic attraction is more near its ends.  
 IV. Transparent objects allow light to pass through them partially.

	I	II	III	IV
A.	T	F	F	F
B.	T	F	T	F
C.	F	T	T	F
D.	T	T	T	F

17. Ramesh wants to increase the strength of his electromagnet. Which of the following can he do to make the electromagnet stronger?

- I. Increase the number of times the magnet is stroked.  
 II. Increase the number of batteries.  
 III. Increase the number of coils used around the electromagnet.  
 IV. Change the thickness of the wire.
- A. I and III only  
 B. II, III and IV only  
 C. II and III only  
 D. I, II and IV only

18. Match column I with column II and select the correct option for the conversion of units from the given codes.

Column I	Column II
P. 1 km	(i) $10^{-3} \text{ m}$
Q. 1 cm	(ii) $10^3 \text{ kg}$
R. 1 mm	(iii) $10^3 \text{ m}$
S. 1 tone	(iv) $10^{-2} \text{ m}$
T. 1 quintal	(v) $10^2 \text{ kg}$
A. P-(i), Q-(iv), R-(iii), S-(v), T-(ii)	
B. P-(iii), Q-(i), R-(iv), S-(ii), T-(v)	
C. P-(ii), Q-(i), R-(ii), S-(v), T-(iv)	
D. P-(iii), Q-(iv), R-(i), S-(ii), T-(v)	

19. Read the given statements and select the correct option.

**Statement 1 :** Rechargeable batteries can be recharged by providing them appropriate current.

**Statement 2 :** In a bulb, the filament is broken when a small current is passed through the bulb.

- A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.  
 B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.  
 C. Statement 1 is true but statement 2 is false.  
 D. Statement 1 is false but statement 2 is true.

20. Which of the following statements is incorrect?

- A. The umbrella upturns in strong wind because high speed wind passing over the umbrella creates low pressure.  
 B. The main cause of wind movement is the uniform heating on the earth.  
 C. An anemometer is used for measuring the speed of wind.  
 D. Thunderstorms develop in hot, humid, tropical areas very frequently.