**MOCK TEST – SAT** 

(c) Evaporation

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Time: 1:00 hours

#### Each Question Carries One Mark.

Direction for Que. 1, 2 and 3:- An 8000 kg engine pulls a train of 5 wagons, each of 2000 kg along a horizontal track. If the engine exerts a force of 40000 N and the track offers a friction force of 5000 N. 1. What is the net accelerating force? (b) 35000 N (c) 40000 N (d) 15000 N (a) 33000 N Ans. (b) 35000 N Total mass, m = mass of engine + mass of wagons Sol. Or, m=8000+5×2000=18000 kg. (a) The net accelerating force, F = Engine force - Frictional force Or, F = 40000 - 5000 = 35000 N 2. What is the acceleration of the train? (b)  $1.7 \text{ m/s}^2$ (a) 1.4 m/s<sup>2</sup> (c)  $1.5 \,\mathrm{m/s^2}$ (d) None of these Ans. (d) None of these The acceleration of the train Sol.  $a = F/m = 35000/18000 = 1.94 m/s^{2}$ What is the force of wagon 1 on wagon 2? (Assume frictional force on Engine only) 3. (a) 16000 N (b) 18000 N (c) 22000 N (d) None of these Ans. (d) None of these Sol. Assuming frictional force on engine only Accelerating force on 4 wagons =  $2000 \times 4 \times 1.944 = 15552$ N A newly appointed lab instructor mix kerosene and petrol. The head of the department asked you to separate the 4. mixture of kerosene and petrol. What method you will use to separate two liquids? (a) Sublimation (b) Fractional distillation

Ans. (b) Fractional distillationSol. The miscible mixture of petrol and kerosene can be separated by fractional distillation. On heating in the distillation flask, petrol having lower boiling point than kerosene, distills out first.

(d) filtration





- 5. In the laboratory, we prepared two solutions one of NaCl in water and another CuSO<sub>4</sub> in water. With the help of a torch both the solutions were tested for tyndall effect. The result obtained was:
  - (a) Solution of NaCl showed Tyndall effect.
  - (b) Solution of CuSO<sub>4</sub> showed Tyndall effect.
  - (c) Both the solutions showed Tyndall effect.
  - (d) None of the two showed Tyndall effect.
- Ans. (d) None of the two showed Tyndall effect.
- Sol. Tyndall effect is the scattering of light by particles. Colloidal particles scatter light because their particles are big enough to do so but they cannot see with the naked eyes as they are also equally small. Salt solution and aqueous CuSO<sub>4</sub> are true solutions and does not scatter light.
- 6. A mixture of milk and groundnut oil can be separated by:

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(a) Sublimation (b) Evaporation (c) Separating funnel (d) Filtration
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- Ans. (c) Separating funnel
- Sol. A mixture of two immiscible liquids can be separated by using a separating funnel.
- 7. Cavity or lumen is narrow in:
  - (a) Sclerenchyma (b) Parenchyma (c) Collenchyma (d) Tracheids
- Ans. (a) Sclerenchyma
- Sol. Cells of sclerenchyma tissue have narrow lumen because sclerenchyma are strongly lignified which lead to compressing the cell and thus only narrow cavity is left.









(d) Only (iii) and (iv)

#### 8. What do the conducting tissues of a plant have?

(i)	Xylem
(ii)	Phloem
(iii)	Cortex
(iv)	Epidermis

(a) Only (i) and (ii) (b) Only (ii) and (iv)

- Ans. (a) Only (i) and (ii)
- Sol. Vascular tissue is a complex conducting tissue, formed of more than one cell type, found in vascular plants. The primary components of vascular tissue are the xylem and phloem. These two tissues transport fluid and nutrients internally.

(c) Only (i) and (iii)

- 9. Connective tissue with a fluid matrix is:
- (a) Ligament (b) Tendons (c) Blood (d) Cartilage
- Ans. (c) Blood
- Sol. Blood is a liquid connective tissue, containing plasma as liquid substance while rest three options are the tissues having dense fibrous matrix.



10. In the given figure BO and CO are the bisectors of  $\angle B$  and  $\angle C$  respectively. If  $\angle A = 50^{\circ}$ , then



(a)  $x + y = 75^{\circ}$ (c)  $x + y = 85^{\circ}$ 

Ans. (b)  $x + y = 65^{\circ}$ 

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Sol. In  $\triangle ABC$ 

 $\angle A + 2x + 2y = 180^{\circ}$ 

(Angle sum property of  $\Delta$ )



 $2x + 2y = 180^{\circ} - \angle A$  $2(x + y) = 180^{\circ} - 50^{\circ}$  $x + y = \frac{130}{2}$  $x + y = 65^{\circ}$ 

#### Directions (Q. 11 - Q.12):-

In the given figure, AB || CD. If  $\angle EAB = 50^\circ$  and  $\angle ECD = 60^\circ$ ,



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12. Then  $\angle ABC = ?$ 

(a)  $70^{\circ}$ (b) 60°

(d)  $80^{\circ}$ 

(c)  $50^{\circ}$ 

Ans. (b)  $60^{\circ}$ 

 $\therefore \angle DCB = \angle ABC = 60^{\circ}$ (Alternate interior  $\angle s$ ) Sol.

13. In the figure, If AB||CD, and  $CE \perp ED$ , then the value of x is



: AB||CD

 $\therefore \angle AED + \angle CDE = 180^{\circ}$  (sum of interior  $\angle s$  of same side of transversal)  $\angle AED + \angle CED + \angle CDE = 180^{\circ}$  $37^{\circ} + 90^{\circ} + x = 180^{\circ}$  $127^{\circ} + x = 180^{\circ}$  $x = 180^{\circ} - 127^{\circ}$  $x = 53^{\circ}$ 





14.







In  $\Delta PQR$  $\angle P = 90^{\circ}$  $\therefore y = \angle PSQ = 90^{\circ} - x = 90^{\circ} - 37^{\circ} = 53^{\circ}$ Again,  $\angle QSR = 90^\circ - y = 37^\circ$ Trick: -- $\angle QSR = x$ .[alternate interior angles]  $\angle OSR = 37^{\circ}$ 16. India shares longest international boundary with (a) China (b) Bhutan (d) Bangladesh (c) Pakistan Ans. (d) Bangladesh Sol. India shares longest international boundary with Bangladesh 17. The Indian State that has common frontiers with China and Pakistan is (a) Himachal Pradesh (b) Jammu and Kashmir (c) Punjab (d) Uttaranchal Ans. (b) Jammu and Kashmir The Indian State that has common frontiers with China and Pakistan is Jammu and Kashmir Sol. 18. Match the following: **Neighboring Country** State (a) Uttaranchal i. Myanmar ii. Pakistan (b) Rajasthan iii. China (c) Meghalaya (d) Nagaland iv. Bangladesh (a) A-iv, B-iii, C-ii, D-i (b) A-iii, B-ii, C-iv, D-i (c) A-i, B-iii, C-ii, D-iv (d) A-ii, B-iv, C-i, D-iii Ans. (b) A-iii, B-ii, C-iv, D-i Uttaranchal - China Sol. Rajasthan-Pakistan - Pakistan Meghalaya Nagaland – Myanmar





19. And	<ul> <li>The difference between the duration of day and night is hardly felt at Kanyakumari but not so at Kashmir. Why?</li> <li>(a) Because Kashmir is a cold place</li> <li>(b) Because Kashmir comes under the shadow of the Himalayan Mountains</li> <li>(c) Because sunlight is reflected off the sea water around Kanyakumari</li> <li>(d) Because Kanyakumari is nearer to the Equator than Kashmir</li> </ul>							
Alls.	(d) Because Kanyakumari is nearer to the Equator than Kashmir							
20.	One of the state through which the tropic of cancer passes is							
	(a) Orissa.	(b) Manipur.	(c) Mizoram.	(d) Bihar.				
Ans.	(a) Orissa.							
Sol.	One of the state through which the tropic of cancer passes is Orissa							
21.	The two neighbouring countries in the eastern part of India are							
	(a) Myanmar and Bangladesh.		(b) Afghanistan and Pakistan.					
	(c) Nepal and Bhutan.		(d) China and Japan.					
Ans.	(a) Myanmar and Bangla	idesh.						
Sol.	The two neighbouring countries in the eastern part of India are Myanmar and Bangladesh.							
22.	The time lag between GMT to Indian Standard Time is							
	(a) five hour ten minutes		(b) five hours.					
	(c) five hours twenty min	nutes	(d) five hours thirty mi	d) five hours thirty minutes				
Ans.	(d) five hours thirty minu	ites						
Sol.	The time lag between GMT to Indian Standard Time is five hours thirty minutes							
23.	In India Tropic of cancer passes through the state of							
	(a) Bihar	(b) Orissa	(c) Jharkhand	(d) Uttar Pradesh				
Ans.	(c) Jharkhand							
Sol.	In India Tropic of cancer passes through the state of Jharkhand							
24.	The southern most point of India is -							
	(a) Kanya Kumari	(b) Indira Point	(c) Point Calimer	(d) Rameshwaram				
Ans.	(b) Indira Point							
Sol.	The southernmost point of India is Indira Point –							
25.	What did the Red Cap worn by Sans Culottes in France symbolize?							
	(a) Liberty	(b) Brotherhood	(c) Love	(d) Equality				
Ans.	(a) Liberty							
Sol.	The red caps worn by the dock workers symbolized that they have been set free and they are no more slaves							
	now. The cap is the syml	ool that the workers can r	now enjoy freedom and	have the right of self expression				

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26.	The word 'Guillotine' during French Revolution era refers to							
	(a) Beheading a person	Beheading a person (b) Awarding a person		on				
	(c) Taxing a person		(d) Threatening a per	rson				
Ans.	(a) Beheading a person							
Sol.	The guillotine, which ca	guillotine, which came to symbolize the French Revolution, was first used in 1792 But the justice that						
	the guillotine once repre- killed for being counterre	ne guillotine once represented was marred by the Reign of Terror. In 1794, thousands were imprisoned and illed for being counterrevolutionary.						
27.	The 'Social Contract' was written by							
	(a) Aristotle	(b) Machiavelli	(c) Plato	(d) Rousseau				
Ans.	(d) Rousseau							
Sol.	. The Social Contract, originally published as On the Social Contract; or, Principles of Political Rights (French: Du contrat social; ou Principes du droit politique) by Jean-Jacques Rousseau, is a 1762 book in which							
	Rousseau theorized about the best way to establish a political community							
28.	The year that Napoleon was defeated in Waterloo was							
201	(a) 1804	(b) 1810	(c) 1815	(d) 1821				
Ans.	(c) 1815	(0) 1010	(•) 1010	(4) 1021				
Sol.	The year that Napoleon was defeated in Waterloo was 1815							
29.	The population of France rose from about 23 million to 28 million in the year							
	(a) 1715-1789	(b) 1725-1774	(c) 1774-1775	(d) 1770-1789				
Ans.	(a) 1715-1789							
Sol.	The population of France rose from about 23 million to 28 million in the year 1715-1789							
30.	The group that was descr	The group that was described as 'passive citizen' by the Constitution of 1791 in France was						
	(a) Landed clergy		(b) Political philosph	ieres				
	(c) Taxpaying peasants		(d) Women and peas	ants				
Ans.	(d) Women and peasants							
Sol.	The group that was des	cribed as 'passive citi	zen' by the Constitution	on of 1791 in France was Women and				
	peasants							

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