

AP PGECET Sample Paper

1. What are polymorphs in mineralogy?
 - Rocks formed under identical pressure and temperature conditions
 - Two or more minerals with the same chemical formula but different crystal structures
 - Crystals that form only in metamorphic environments
 - Minerals with different chemical formulas but similar crystal structures

Correct Answer: 2

2. In a town, the probability that a person attends a gym on weekdays is 0.7, the probability that a person attends on weekends is 0.4, and the probability that a person attends the gym on weekdays or weekends or both is 0.3. What is the probability that a person attends the gym on both weekdays and weekends?
 - 0.6
 - 0.7
 - 0.8
 - 0.9

Correct Answer: 3

3. Which of the following crude drugs is obtained from a mineral origin?
 - Digitalis
 - Sandalwood
 - Nux Vomica
 - Kaolin

Correct Answer: 4

4. What is the primary function of dental abrasives?
 - Removing plaque and stains
 - Enhancing digestion
 - Neutralizing stomach acid
 - Regulating blood pressure

Correct Answer: 1

5. Assume G is a simple undirected graph, and some vertices of G are of degree. Add a node v to G and make it adjacent to each odd-degree vertex of G , then the resultant graph is sure to
 - Euler
 - Complete
 - Hamiltonian

- Clique

Correct Answer: 1

6. There are three cards in a box, both sides of one card are black, both sides of one card are red, and the third card has one black side and one red side. We pick a card at random and observe only one side. What is the probability that the opposite side is the same color as the side we observed?

- $\frac{3}{4}$
- $\frac{2}{3}$
- $\frac{1}{2}$
- $\frac{1}{3}$

Correct Answer: 4

7. The medium that reflects high-frequency radio waves to the Earth's surface is called.

- Biosphere
- Stratosphere
- Troposphere
- Ionosphere

Correct Answer: 4

8. If the carrier and modulating frequencies are 100 kHz and 5kHz, respectively, the bandwidth of AM transmission will be

- 2 kHz
- 5 kHz
- 10 kHz
- 40 kHz

Correct Answer: 3

9. The most common mode of transmission for diphtheria, pneumonia, and tuberculosis is through

- Direct contact
- Aerosols
- Contaminated water
- Insect vectors

Correct Answer: 2

10. In bacterial operons, which mutation would prevent transcription of downstream structural genes but not affect the promoter region?

- Mutation in the operator
- Mutation in the promoter

- Mutation in the repressor gene
- Mutation in the Shine-Dalgarno sequences

Correct Answer: 1

11. If the length of a simply supported beam carrying a concentrated load at the center is doubled, the deflection at the center will become

- Two times
- Four times
- Eight times
- Sixteen times

Correct Answer: 3

12. The modulus of resilience is the

- Area under the entire stress-strain curve
- Area under the stress-strain curve up to the yield point
- Maximum stress multiplied by maximum strain
- Ratio of stress to strain

Correct Answer: 2

13. The whirling speed of a shaft coincides with the natural frequency of the

- Longitudinal vibration
- Transverse vibration
- Torsional vibration
- Coupled with torsional vibration

Correct Answer: 2

14. If the ratio of the diameter of the rivet hole to the pitch of the rivets is 0.30, then the tearing efficiency of the joint is

- 70%
- 60%
- 50%
- 30%

Correct Answer: 1

15. The steady state error due to a ramp input for a type two system is equal to

- Zero
- Infinite
- Non-zero number
- Constant

Correct Answer: 1

16. If the accumulator of an Intel 8085A microprocessor contains 37H and the previous operation has set the carry flag, the instruction ACI 56H will result in

- 8E H
- 94 H
- 7E H
- 84 H

Correct Answer: 1

17. Yogurt is produced by the fermentation of milk using

- *Saccharomyces cerevisiae*
- *Acetobacter aceti*
- *Lactobacillus bulgaricus*
- *Penicillium roqueforti*

Correct Answer: 3

18. Using a multiple-effect evaporator in food concentrate production is mainly to

- Improve the color of the product
- Increase the boiling point in each stage
- Save energy by reusing heat in successive stages
- Add flavors during evaporation

Correct Answer: 3

19. The gauge factor of a strain gauge indicates its:

- Accuracy
- Sensitivity
- Dead zone
- Precision

Correct Answer: 2

20. The devices that are used for the measurement of very high temperatures are:

- Thermistors
- Thermocouples
- Pyrometers
- RTDs

Correct Answer: 3

21. Which of the following diagrams is used to predict oxide stability?

- Phase diagram
- TTT diagram
- Ellingham diagram
- Lever rule diagram

Correct Answer: 3

22. The structure of a polymer depends on

- Crystal size
- Chain structure and crosslinking
- Grain size
- Surface fish

Correct Answer: 2

23. Pick the difference between mixing and blending.

- Mixing can only be done for a solid-solid system, while blending is done for a solid-liquid mixture.
- Mixing is done for liquid-liquid, gas-liquid, and solid-liquid systems, while blending is done for solid-solid mixtures.
- Blending is done for liquid-liquid and gas-liquid systems, while mixing is done for solid-solid mixtures.
- Mixing is done for liquid-liquid and gas-liquid systems, while blending is done for solid-solid mixtures.

Correct Answer: 2

24. The number of tube and shell passes of a 3-6 pass exchanger will be

- 3 and 6
- 3 and 3
- 3 and 5
- 6 and 3

Correct Answer: 4

25. The grain size distribution in the nano material is close to?

- Bimodal
- Parabolic
- Log normal
- Exponential

Correct Answer: 3

