

Chose the Correct option;

1. The court _____ cognizance of the criminal's words.

- (a) took
- (b) made
- (c) gave
- (d) allowed

2. _____ wins this civil war there will be little rejoicing at the victory.

- (a) Whichever
- (b) Whoever
- (c) Whatever
- (d) Wherever

3. As he got older his belief in these principles did not _____.

- (a) wither
- (b) shake
- (c) waver
- (d) dither

4. Everyone in this world is accountable to God _____ his actions.

- (a) about
- (b) for
- (c) to
- (d) over

5. Your father used to be the prin-cipal of this college,

- (a) did he ?
- (b) does he ?
- (c) didn't he?
- (d) doesn't he ?

6. Fate smiles those who untiringly grapple with stark realities of life.

- A. with
- C. on

- B. over
- D. round

7. Success in this examination depends hard work alone.

- A. at
- C. for

- B. over
- D. on

In the following the questions choose the word which best expresses the meaning of the given word.

8. WARRIOR

A. Soldier

C. Pirate

B. Sailor

D. Spy

9. DISTANT

A. Far

C. Reserved

B. Removed

D. Separate

10. ADVERSITY

A. Failure

C. Misfortune

B. Helplessness

D. Crisis

11. FAKE

A. Original

C. Trustworthy

B. Imitation

D. Loyal

12. INDICT

A. Condemn

C. Accuse

B. Reprimand

D. Allege

13. STRINGENT

A. Dry

C. Rigorous

B. Strained

D. Shrill

14. LAMENT

A. Complain

C. Condone

B. Comment

D. Console

15. HESITATED

A. Stopped

C. Slowed

B. Paused

D. Postponed

In the following questions choose the word which is the exact OPPOSITE of the given words.

16. ENORMOUS

A. Soft

C. Tiny

B. Average

D. Weak

17. COMMISSIONED

A. Started

C. Finished

B. Closed

D. Terminated

18. ARTIFICIAL

A. Red

C. Truthful

B. Natural

D. Solid

19. EXODUS

- A. Influx
C. Return

- B. Home-coming
D. Restoration
-

20. RELINQUISH

- A. Abdicate
C. Possess

- B. Renounce
D. Deny
-

21. EXPAND

- A. Convert
C. Congest

- B. Condense
D. Conclude
-

22. MORTAL

- A. Divine
C. Spiritual

- B. Immortal
D. Eternal
-

In the questions below the sentences have been given in Direct/Indirect speech. From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.

23. "If you don't keep quite I shall shoot you", he said to her in a calm voice.

- A. He warned her to shoot if she didn't keep quite calmly.
B. He said calmly that I shall shoot you if you don't be quite.
C. He warned her calmly that he would shoot her if she didn't keep quite.
D. Calmly he warned her that be quite or else he will have to shoot her.
-

24. I told him that he was not working hard.

- A. I said to him, "You are not working hard."
B. I told to him, "You are not working hard."
C. I said, "You are not working hard."
D. I said to him, "He is not working hard."
-

25. His father ordered him to go to his room and study.

- A. His father said, "Go to your room and study."
B. His father said to him, "Go and study in your room."
C. His father shouted, "Go right now to your study room"
D. His father said firmly, "Go and study in your room."
-

26. He said to his father, "Please increase my pocket-money."

- A. He told his father, "Please increase the pocket-money"
B. He pleaded his father to please increase my pocket money.
C. He requested his father to increase his pocket-money.
D. He asked his father to increase his pocket-money.
-

27. She said that her brother was getting married.

- A. She said, "Her brother is getting married."
B. She told, "Her brother is getting married."
C. She said, "My brother is getting married."
D. She said, "My brother was getting married."

Which of phrases given below each sentence should replace the phrase printed in **bold** type to make the grammatically correct? If the sentence is correct as it is, mark 'E' as the answer.

28. The small child does whatever his father **was done**.

A. has done

B. did

C. does

D. had done

E. No correction required

29. **You need not come unless you want to.**

A. You don't need to come unless you want to

B. You come only when you want to

C. You come unless you don't want to

D. You needn't come until you don't want to

E. No correction required

30. There are not many men who are so famous that they are frequently referred to by their **short names only**

A. initials

B. signatures

C. pictures

D. middle names

E. No correction required

Section-B (Marks 10x2)

31. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is :

A. $\frac{1}{4}$

B. $\frac{1}{10}$

C. $\frac{7}{15}$

D. $\frac{8}{15}$

32. What should come in place of both x in the equation

$$\sqrt[3]{128} = \frac{\sqrt{162}}{x}$$

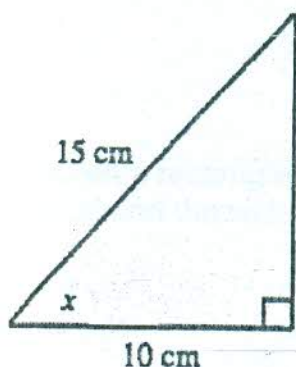
A. 12

B. 14

C. 144

D. 196

33. Find $\tan(x)$ for angle x in the figure.



A. $\frac{\sqrt{5}}{2}$

B. $\frac{\sqrt{5}}{3}$

C. $\frac{2}{3}$

D. $\frac{\sqrt{13}}{2}$

34. What is the area of an equilateral triangle with all sides of length 8 inches?

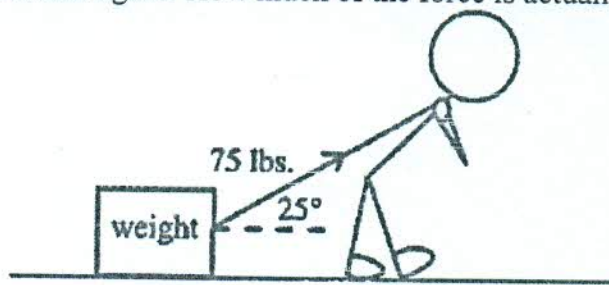
A. 24 in.^2

B. 32 in.^2

C. $16\sqrt{2} \text{ in.}^2$

D. $16\sqrt{3} \text{ in.}^2$

35. Suppose a person drags a heavy weight across the ground by pulling with 75 pounds of force at a 25° angle, as illustrated in the figure. How much of the force is actually pulling the weight in



the direction it is moving?

A. 32 lbs.

B. 35 lbs.

C. 50 lbs.

D. 68 lbs.

36. For all real numbers x , $\cos^2(x) - \sin^2(x) =$

- A. 0 B. 1
C. $\sin(2x)$ D. $\cos(2x)$

37. If $y = (x + 3)^2$, then $(-2x - 6)^2$ must equal which of the following?

- A. $-4y^2$ B. $-2y^2$
C. $-4y$ D. $4y$

38. If $xy = 2$ and $xy^2 = 8$, what is the value of x ?

- (A) $\frac{1}{2}$ (B) 2
(C) 4 (D) 8

39. Given a rectangle with sides of length x and width y . Suppose the length x is doubled and the width halved. The new perimeter is

- A. $4x + y$ B. $2x$
C. $2x + y^2$ D. $x^2 + y$

40. An equation for the straight line which passes through the points $(3, 2)$ and $(5, -2)$ is

- (A) $y = 2x + 8$ (B) $y = -2x + 8$
(C) $y = 2x + 4$ (D) $y = -2x + 4$

Section-C (Marks 25x2=50)

41. Natural frequency of simple pendulum depends upon.
- A) Its mass
 - B) Its length
 - C) Square of its length
 - D) Square root of its length
42. A charge Q is enclosed by a Gaussian spherical surface of radius R . If the radius is doubled, then the outward electric flux will
- (A) Be doubled
 - (B) Increase four times
 - (C) Be reduced to half
 - (D) Remain the same
43. Blue colour of sea water is due to
- (A) interference of sunlight reflected from the water surface
 - (B) scattering of sunlight by the water molecules
 - (C) image of sky in water
 - (D) refraction of sunlight
44. Electromagnetic wave consists of periodically oscillating electric and magnetic vectors
- (A) in randomly oriented planes but vibrating in phase.
 - (B) in mutually perpendicular planes but vibrating in phase.
 - (C) in mutually perpendicular planes but vibrating with a phase difference of π
 - (D) in mutually perpendicular planes but vibrating with a phase difference of $\pi/2$

45. If μ_0 is permeability of free space and ϵ_0 is permittivity of free space, the speed of light in vacuum is given by

(A) $\sqrt{\mu_0 \epsilon_0}$

(B) $\sqrt{\mu_0 / \epsilon_0}$

(C) $\sqrt{\frac{1}{\mu_0 \epsilon_0}}$

(D) $\sqrt{\epsilon_0 / \mu_0}$

46. In which of the processes, does the internal energy of the system remain constant?

(A) Adiabatic

(B) Isochoric

(C) Isobaric

(D) Isothermal

47. The maximum kinetic energy of emitted electrons in a photoelectric effect does not depend upon

(A) wavelength

(B) frequency

(C) intensity

(D) work function

48. The acceleration due to gravity becomes $\left(\frac{g}{2}\right)$ where g = acceleration due to gravity on the surface of the earth at a height equal to

(A) $\frac{R}{2}$

(B) $2R$

(C) $\frac{R}{4}$

(D) 4R

49. A 1250 W heater operates at 115 V. What is the resistance of the heating coil?

(A) $1.6\ \Omega$

(B) $13.5\ \Omega$

(C) $1250\ \Omega$

(D) $10.6\ \Omega$

50. A Carnot engine has efficiency 25%. It operates between reservoirs of constant temperatures with temperature difference of 80°C . What is the temperature of the low-temperature reservoir?

(A) -25°C

(B) 25°C

(C) -33°C

(D) 33°C

51. When a helium atom loses an electron it becomes:

A) An alpha particle.

B) Proton.

C) A positive helium ion.

D) A negative helium ion.

52. An electric charge in uniform motion produces:

A) An electric field.

B) A magnetic field.

C) Both magnetic and electric fields.

D) Neither magnetic nor electric fields.

53. If the mass of the bob of a pendulum is doubled its time period is:

A) Halved.

B) Doubled.

C) Unchanged.

D) Increases four times.

54. X – rays were discovered by,

- A) I.J. Thomson.
- B) Crooks.
- C) Lorenz.
- D) Roentgen.

55. A Second is defined as the duration of vibration of

- A) Carbon atom
- B) Cesium atom
- C) Radium atom
- D) Nitrogen atom

56. sound wave is an example of

- A) Longitudinal wave
- B) Transverse wave
- C) Stationary wave
- D) All of these

57. A body in equilibrium.

- A) always at rest
- B) always in uniform motion
- C) may be at rest or in uniform motion
- D) may be at rest or in motion

58. Nuclear sizes are expressed in a unit named

A.Fermi
C.newton

B.angstrom
D.tesla

59. out of the following, which is not emitted by radioactive substance?

- A.Electrons
- B.Electromagnetic radiations
- C.Alpha particles
- D.Neutrons

60. Optical fiber works on the

- A.principle of refraction
- B.total internal reflection
- C.scattering
- D.interference

61. Isotopes of an element contain

- A. the same number of protons but different number of neutrons
- B. the same number of neutrons but different number of protons
- C. equal number of protons and electrons
- D. equal number of nucleons

62. Pa(Pascal) is the unit for

- A. thrust
- B. pressure
- C. frequency
- D. conductivity

63. Rectifiers are used to convert

- A. Direct current to Alternating current
- B. Alternating current to Direct current
- C. high voltage to low voltage
- D. low voltage to high voltage

64. Magnetism at the centre of a bar magnet is

- A. minimum
- B. maximum
- C. zero
- D. minimum or maximum

65. Suitable impurities are added to a semiconductor depending on its use. This is done in order to

- A. increase its life
- B. enable it to withstand higher voltages
- C. increase its electrical conductivity
- D. increase its electrical resistivity