

ALL KERALA BHAVAN'S
SCHOLARSHIP EXAMINATION 2018-2019

CLASS : XII (SCIENCE STREAM)

Duration : 1 ½ Hrs

Date :

Max Marks : 100

ENGLISH

1. Choose the best alternative to complete the sentence.

The ship waited till the storm _____ before sailing out to sea.

- a) Normalized
b) Evaporated
c) Consolidated
d) Abated

2. Find the antonym of '*Languish*'

- a) Ripen
b) Flourish
c) Hasten
d) Weaken

3. The synonym of '*Impalable*' is _____.

- a) Intangible
b) tangible
c) Volatile
d) libelous

4. An endless fountain of Immortal drink

Pouring unto us from the heaven's brink.

Name the poet

- a) W.B Yeats
b) William Wordsworth
c) John Keats
d) Robert Frost

5. The figure of speech used in the word "ringed" in the poem "Aunt Jennifer's Tigers" is

- a) Synecdoche
b) Pun
c) Metonymy
d) Symbol

6. The "ugly middle position" was a phrase used in

- a) Lost Spring
b) The Enemy
c) Should Wizard Hit Mommy?
d) On the Face of It"

7. Jasmine appeared as bashful as a school girl when her boss praised her in front of her colleagues .(choose the synonym of the underlined word from the words given below)

- a) Proud
b) Shy
c) Fresh
d) lively

8. _____ proverb means one should not risk everything he has in a single venture .
- Everyone can find fault ,few can do better
 - Anytime means no Time.
 - Fair exchange is no robbery .
 - Don't put all your eggs in one basket .

MATHEMATICS

9. If function $f(x) = x^3 + \alpha x^2 + \beta x + 1$ is maximum at $x=0$ and minimum at $x=1$, then
- $\alpha=2/3, \beta=0$
 - $\alpha=-3/2, \beta=0$
 - $\alpha=0, \beta=3/2$
 - none of these.

10. The differential equation $y \frac{dy}{dx} + x = c$ represents

- A family of hyperbolas.
- A family of parabolas.
- A family of ellipses.
- A family of circles.

11. If \vec{a} , \vec{b} and $\frac{\vec{a}}{\sqrt{3a}} - \frac{\vec{b}}{b}$ are the unit vectors then the angle between \vec{a} and \vec{b} is.

- $\frac{\pi}{4}$
- $\frac{\pi}{3}$
- $\frac{\pi}{6}$
- $\frac{\pi}{2}$

12. The value of $\cot(\sin^{-1}x)$ is

- $\frac{\sqrt{1-x^2}}{x}$
- $\frac{1}{x}$
- $\frac{x}{\sqrt{1+x^2}}$
- $\frac{\sqrt{1+x^2}}{x}$

13. Two numbers are chosen from $\{1, 2, 3, 4, 5, 6\}$ one after the other without replacement. The probability that one of the smaller value of the two is less than 4 is

- $\frac{4}{5}$
- $\frac{1}{15}$
- $\frac{1}{5}$
- $\frac{14}{15}$

14.

$$\begin{vmatrix} a & b-c & 2a \\ 2b & b-c-a & 2b \\ 2c & 2c & c-a-b \end{vmatrix} = \underline{\hspace{2cm}}$$

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a) $(a+b+c)^3$

b) $(a+b+c)^2$

c) $(a+b+c)$

d) none of these

15. If $f(x) = \frac{4x+3}{6x-4}$, $x \neq \frac{2}{3}$ then $(f \circ f)(x) = \underline{\hspace{2cm}}$

(a) x

(b) $2x-3$

(c) $\frac{4x-6}{3x+4}$

(d) none of these

16. Let $[x]$ denote the greatest integer less than or equal to x ,

then $\int_{-1}^1 [x] dx = ?$

(a) -1

(b) 0

(c) $1/2$

(d) 2

INFORMATICS PRACTICES

9. Transliteration is also known as

a) Phonetic text entry

b) Text typing

c) Keymap based text entry

Domain name resolution

10. Name of a native class in Java

a) JLabel

b) JButton

c) Math

d) JTextField

11. Which is the Unary Operator among them

a. $\&\&$

b. $++$

c. $\%$

d. $*$

12. What is approximate size of double in bytes ?

a. 2

b. 4

c. 8

d. 10

13. Number of columns in a table is called

a. Power

b. degree

c. Cardinality

d. None

14. Microwaves are :

a) Omni directional

c) Guided media

b) Unidirectional

d) Not used in communication

15. A domain maps to

a). URL

b). A website

c). An IP address

d). all of these

16. Which of the following unit measures the speed with which data can be transmitted from one node to another node of a network ?
- a). Mbps b). kmps c). Mgps d). bps

PHYSICS

17. Two metallic spheres of radii 1cm and 3cm are given charges of -1×10^{-2} C and 5×10^{-2} C respectively. If these are connected by a conducting wire, the final charge on the bigger sphere is

- (a) 2×10^{-2} C (b) 3×10^{-2} C
(c) 4×10^{-2} C (d) 1×10^{-2} C

18. Two cells having the same emf are connected in series through an external resistance R. Cells have internal resistance r_1 and r_2 ($r_1 > r_2$) respectively. When the circuit is closed, the potential difference across the first cell is zero. The value of R is

- (a) $r_1 + r_2$ (b) $r_1 - r_2$
(c) $(r_1 - r_2)/2$ (d) $(r_1 + r_2)/2$

19. Two long conductors separated by a distance 'd' carry currents I_1 and I_2 in the same direction. They exert a force F on each other. Now current in one of them is increased to two times and its direction is reversed. The distance is also increased to 3d. The new value of force between them is

- (a) $-2F$ (b) $F/3$ (c) $-2F/3$ (d) $-F/3$

20. The refracting angle of a prism 'A' and refractive index of the material of the prism is $\cot(A/2)$. The angle of minimum deviation is

- (a) $(180^\circ - 2A)$ (b) $(90^\circ - 2A)$
(c) $(180^\circ + 2A)$ (d) $(180^\circ - 3A)$

21. Two coherent light beams of intensity I and 4I are superposed. The maximum and minimum possible intensities in the resulting beam are

- (a) 5I and 3I (b) 9I and I (c) 9I and 3I (d) 5I and I

22. A parallel plate capacitor with oil between the plates (dielectric constant of oil $k=2$) has a capacitance C. If the oil is removed, then capacitance of the capacitor becomes

- a). 2c b). $C/\sqrt{2}$ c). 2C d). $C/2$

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23. A 30V, 90 W lamp is to be operated on a 120V Dc line. For proper glow, a resistor of _____ Ω should be connected in series with the lamp.

- (a) 40 b.10 c.20 d.30

24. An electromagnetic wave going through vacuum is denoted by $E = E_0 \sin(kx - \omega t)$. Which of the following is/are independent of wavelength?

- a).k b). ω c). $\frac{k}{\omega}$ d).k ω

.....

CHEMISTRY

25. Which of the following does not show mutarotation?

- a) (-)Fructose b) (+) Lactose
c) (+) Maltose d) (+) Sucrose.

26. The rate of a reaction doubles when its temperature change from 300K to 310K. Activation energy of such a reaction will be

- a) 60.5KJ/mol b) 53.6KJ/mol
c) 48.6 KJ/mol d) 58.5 KJ/mol

27. If molality of the dilute solution is doubled the value of molal depression constant will be,

- a) doubled b) halved c) tripled d) unchanged

28. The half life time of 2g sample of radioactive nuclide 'X' is 15 min. The half life time of 1 g sample of X is

- a. 7.5 min b. 15 min c. 22.5 min d. 30 min

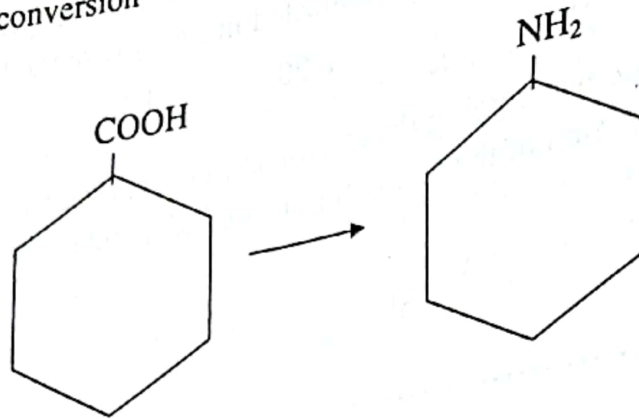
29. The brown ring test for nitrates depends on

- a) the reduction of nitrate to nitric oxide
b) oxidation of nitric oxide to nitrogen dioxide
c) reduction of ferrous sulphate to iron
d) Oxidizing action of sulphuric acid

30. NO_2 is not obtained on heating

- a). AgNO_3 b) KNO_3 c) $\text{Cu}(\text{NO}_3)_2$ d) $\text{Pb}(\text{NO}_3)_2$

31. In the conversion



The sequence of the reagents used are

- a) (i)SOCl₂ (ii)NH₃ (iii)H₂O, Heat
 - b) (i)SOCl₂ (ii)NH₃
 - c) (i)SOCl₂ (ii)NH₃ (iii)Heat
 - d) (i)SOCl₂ (ii)KCN (iii)LiAlH₄
32. Which of the following pairs of metals is purified by van Arkel method ?
- a) Ni and Fe
 - b) Ga and In
 - c) Zr and Ti
 - d) Ag and Au

BIOLOGY

33. If an endosperm cell of an angiosperm contains 24 chromosomes, the number of chromosomes in each cell of the root will be
- a) 8
 - b) 4
 - c) 16
 - d) 24
34. If the recombination frequencies of fruitfly between genes b (black body) and vg (vestigial wings) is 18%, b (black body) and Cn (cinnabar eye) is 9% and Cn (cinnabar eye) and vg (vestigial wings) is 9.5%. Identify the correct sequence of genes in fruitfly.
- a) Cn, b and vg
 - b) b, cn and vg
 - c) vg, b and cn
 - d) cn, vg and b
35. Nile perch when introduced in lake Victoria of South Africa resulted in
- a) Excessive growth of cichlid fish.
 - b) Elimination of water weeds.
 - c) Excessive growth of water weeds.
 - d) Elimination of native species of cichlid fish.

36. Early produced mother's milk i.e. colostrum must be fed to child in order to develop
- Resistance to allergy by IgA
 - Passive immunity by IgA
 - Active immunity due to IgA
 - Resistance to intestinal infections because of Ig E.
37. A single strand of nucleic acid tagged with a radioactive molecule.
- Vector
 - Selectable Marker
 - Plasmid
 - Probe
38. Nucellar polyembryony is reported in species of
- Citrus
 - Brassica
 - Triticum
 - Gossypium
39. Foetal ejection reflex is induced by
- Mammary Gland
 - Oxytocin
 - Corpus luteum
 - Fully developed foetus and placenta
40. The Highest concentration of DDT in aquatic food chain is seen in
- Sea Gull
 - Eel
 - Crab
 - Frog

COMPUTER SCIENCE

33. In a for loop, the next statement that will be executed after continue statement is :
- Update statement
 - the statement immediately after continue
 - Test expression
 - initialization statement
34. Write the max term, if the inputs are A=0, B=1, C=1 and D=0
- A'BCD'
 - AB'C'D
 - A'+B+C+D'
 - A+B'+C'+D
35. Synonym of rule in networking is:
- Standard
 - Topology
 - Protocol
 - Form
36. In star topology, the device linking all nodes in a network is :
- Bridge
 - Gateway
 - Backbone
 - Switch
37. Which of the following c++ code is used to create a new node?
- ```
struct NODE{
```

```

int data;
NODE *link; } *ptr;

```

- a) new ptr = \*NODE;
- c) ptr = new NODE;

- b) \*NODE = new ptr;
- d) intptr = new NODE;

38. A stack with stack size of 5, already has 5 elements in it. If we push an element into this stack, then the stack becomes

- a) Overflow
- b) Crash
- c) Underflow
- d) User flow

39. Find the output for the following code

```

void main()
{
int a[] [3] = {{1,2,3},{5,6,7}};
for (int i=1; i<2; i++)
for (int j=1; j<3; j++)

```

```

{
Count << a[i][j];
Count << "\n";
Count << a[0][2] * a[1][2];
Count << "\n";
}

```

- a). 6\*7\*21\*
- b). 7\*8\*21\*21\*
- c). 9\*7\*21\*
- d). 5\*7\*

40. Given the following code fragment

```

Intch=20;
Cout<<ch<< ++ch<<ch<< "\n"

```

What is the effect of replacing ++ch with ch+1 ?

- a) 21 20 20
- b) 22 20 21
- c) 20 21 20
- d) 20 20 21



**GK**

41. Which award is known as Asia's Nobel prize?  
a) Magsaysay award  
b) Right lively hood award  
c) Holberg award  
d) Fields Medal
42. Which rescue operation has been launched by Indian army in the flood-hit areas of kerala?  
a) Operation Raahat  
b) Operation sahyog  
c) Operation Parakram  
d) Operation Sukoon
43. In cricket, the length of the pitch between two wickets  
a) 24 yards  
b) 23 yards  
c) 22 yards  
d) 21 yards
44. Who defined democracy are "Government of the people, by the people, and for the people?"  
a) Abraham Lincoln  
b) Plato  
c) Aristotle  
d) Ruskin
45. Which city becomes the first Indian Metro to get a floating market ?  
a).Chennai  
b).Mumbai  
c).Bengaluru  
d).Kolkatta

**IQ**

46. A person has certain number of cows and birds. They have 172 eyes and 344 legs. How many cows and birds does he have?  
a) 1 bird and 86 cows.  
b) 0 birds and 86 cows.  
c) 2 birds and 85 cows.  
d) 2 birds and 86 cows.
47. In a race, if you pass a person in the second place, which place will you be in?  
a) first place  
b) second place

- c) hard to tell  
 d) None of the above.
48. Pole: Magnet:: ? : Battery
- a) Energy  
 b) Power  
 c) Terminals  
 d) Cells

49. Find the missing number :
- 2, 12, 1112, ?, 132112, 1113122112.
- (a) 2113                      (b) 1132  
 (c) 3112                      (d) 2132

50. The day after day after tomorrow is four days before Monday. What day is it Today ?
- a). Monday                      b). Tuesday  
 c). Wednesday                      d). Thursday

**TIE BREAKER QUESTIONS**

51. In a solid AB having NaCl structure. A atoms occupy the corners of the cubic unit cell. If all the face centered atoms along one of the axis are removed, then the resultant stoichiometry of the solid is ,
- a) AB<sub>2</sub>                      b) A<sub>2</sub>B                      c) A<sub>4</sub>B<sub>3</sub>                      d) A<sub>3</sub>B<sub>4</sub>

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