

**ALL KERALA BHAVAN'S
SCHOLARSHIP EXAMINATION 2018-2019**

CLASS : XI (SCIENCE STREAM)

Duration : 1 ½ Hrs

Date :

Max Marks : 100

ENGLISH

1. Choose the correct spelling
 - a) Reanaissance
 - b) Renaissance
 - c) Rennaissance
 - d) Renaisance
2. I prefer chocolate ----- ice-cream
 - a) to
 - b) than
 - c) more than
 - d) better than
3. If I were rich, I _____ travel around the world.
 - (a) Will
 - (b) would
 - (c) would have
 - (d) will have
4. Find the word which means 'Provocative'
 - (a) Pitiabie
 - (b) Exciting
 - (c) Infuriating
 - (d) Pretentious
5. In this organized society of today, no individual or nation can plough a lonely furrow. The underlined phrase means:
 - a) remain unaffected
 - b) do without the help of others
 - c) survive in isolation
 - d) remain non-aligned
6. A light breeze _____ the forest fire and made it more dangerous.
 - a) fanned
 - b) extinguished
 - c) lit
 - d) blew
7. What does 'Frivolous Rebukes' mean in "The Portrait of a Lady"
 - a) arguments
 - b) scolding
 - c) a civil war
 - d) quarrel
8. Figure of speech used in the line 'transient feet'
 - a) Imagery
 - b) Hyperbole
 - c) Transferred Epithet
 - d) Paradox

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MATHEMATICS

9. There are certain number of students in a school. Of them, 130 students passed subject A, 113 passed subject B and 117 passed subject C. But 60 of the students passed exactly two of the subjects where as 20 students passed all the three. Further, 70 students failed in all subjects. The total number of students is

- a) 300
- b) 260
- c) 330
- d) 400

10. If $\sin(A-B) = \cos(A+B) = \frac{1}{2}$, $0 < A < \frac{\pi}{2}$, $0 < B < \frac{\pi}{2}$, then A and B are respectively equal to

- a) $\frac{\pi}{12}, \frac{\pi}{12}$
- b) $\frac{\pi}{12}, \frac{\pi}{4}$
- c) $\frac{\pi}{4}, \frac{\pi}{12}$
- d) $\frac{\pi}{3}, \frac{\pi}{4}$

11. For all $n \in \mathbb{N}$, $3 \times 5^{2n+1} + 2^{3n+1}$ is divisible by

- a) 19
- b) 17
- c) 23
- d) 25

12. The polar form of $(i^{25})^3$ is

- a) $\cos \pi/2 + i \sin \pi/2$
- b) $\cos \pi + i \sin \pi$
- c) $\cos \pi - i \sin \pi$
- d) $\cos \pi/2 - i \sin \pi/2$

13. If R is a relation on a finite set having n elements, then the number of relations on A is

- (a) 2^n
- (b) 2^{n^2}
- (c) n^2
- (d) n^n

14. a, b, c, d are in increasing GP. AM between a and b is 6. AM between c and d is 54. Then AM between a and d is

- (a) 15
- (b) 48
- (c) 44
- (d) 42

15. If $\tan 25^\circ = a$, then $\frac{\tan 155^\circ - \tan 115^\circ}{1 + \tan 155^\circ \tan 115^\circ}$ is

- (a) $\frac{2a}{1-a^2}$
- (b) $\frac{1-a^2}{2a}$
- (c) $\frac{1+a^2}{2a}$
- (d) $\frac{2(1-a^2)}{a}$

16. The least positive integer n for which $\left(\frac{1+i}{1-i}\right)^n$ is real is
- (a) 2 (b) 4 (c) 8 (d) None of these

INFORMATICS PRACTICES

9. Identify the valid Java code of the following:

<p>a.</p> <pre>int c=0, i, n; for (n=i; n>1; n--) { If(i%n == 0) c= c+1; }</pre>	<p>b.</p> <pre>int c=0; for (n=i; n>1; n--) { If(i%n == 0) c= c+1; }</pre>
<p>c.</p> <pre>int c=0,i,n; for (n=i; n>1; n--); { If i%n == 0 c= c+1; }</pre>	<p>d.</p> <pre>int c=0,i,n; for (n=i; n>1; n--) { If(i%n != 0) c= c+1; }</pre>

10. How many times the loop executes?

```
int i = 0, a=19;
While ( i>20)
a++;
```

- (a) 1 time (b) infinite loop (c) 0 time (d) 20 times

11. Which SQL statement is used to extract data from a database?

- a) OPEN b) SELECT c) GET d) EXTRACT

12. With SQL how do you select all the records from a table named

“Persons” where the value of the column “First name” starts with an “a”?

- a) SELECT * FROM Persons WHERE First name like ‘%a’;
b) SELECT *FROM Persons WHERE First name =’a’;
c) SELECT * FROM Persons WHERE First name like ‘a%’;
d) None of these.

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13. Which java method is used to display a specified message in a dialog box

- a) setText()
- b) showMessageDialog()
- c) setSelected ()
- d) setModel ()

14. Choose the correct statement that makes JTextArea1 uneditable

- a) JTextArea1.setEditable(False)
- b) JTextArea1.unEditable(true)
- c) JTextArea1.setEditable(false)
- d) JTextArea1.setUneditable(True)

15. Which SQL statement is used to return only different values ?

- a) SELECT DISTINCT
- b) SELECT UNIQUE
- c) SELECT DIFFERENT
- d) SELECT ALL.

16. What will be the output of the following code:

```
int x =10, y=20;
```

```
If (x<y)
```

```
{
```

```
If (x>y)
```

```
{
```

```
JText Field1 .set Text("HELLO GEEKS");
```

```
}
```

```
else
```

```
{
```

```
jText Field1 .set Text ("WELCOME");
```

```
} }
```

- a) HELLOGEEKS
- b) Compile time error
- c) WELCOME
- d) No output.

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PHYSICS

17. The dimensions of $[ML^{-1}T^{-2}]$ may correspond to
- a) Work done by force b) Linear momentum
c) Pressure d) Energy
18. A body released from the top of a tower falls through half the height of the tower in 3 seconds. It will reach the ground after nearly
- a) 3.5 sec c) 4.71 sec
b) 4.24 sec d) 6 sec
19. A body is projected with a velocity of 40m/sec. After 2 sec, it crosses a vertical pole of height 20.4m. The angle of projection be ($g = 9.8m/sec^2$)
- a) 15° b) 30° c) 45° d) 60°
20. When a wheel is rolling on a level road, the direction of frictional force between the wheel and road is in
- a) Backward direction c) Depends on speed
b) Forward direction d) Cannot say
21. The linear momentum of a body is increased by 10%. What is the percentage increase in the KE?
- a) 10% b) 20% c) 21% d) None of the above
22. When the surface in contact are made too smooth by polishing, force of friction
- (a) Increases (b) decreases
(c) becomes zero (d) becomes infinite
23. The angle of projection at which the horizontal range and maximum height of projectile are equal is
- (a) 45 (b) 60 (c) $\theta = \tan^{-1}(4)$ (d) $\theta = \tan^{-1}(0.25)$
24. The magnitudes of two vectors are 3 and 4 units and their dot product is 6 units. The angle between the vectors is
- (a) $\pi/6$ (b) $\pi/4$ (c) $\pi/2$ (d) $\pi/3$

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CHEMISTRY

25. What will be the molarity of NaOH in this solution prepared by dissolving its 4g in enough water to form 250 ml of this solution?
(a) 0.4 m (b) 0.5 m (c) 0.2 m (d) 0.1 m
26. 2g of oxygen contains number of atoms equal to that in
(a) 7g N (b) 0.5g H (c) 4g S (d) 2.3g Na
27. A subshell with $n=6, l=2$ can accommodate a maximum of
(a) $12e^-$ (b) $36e^-$ (c) $10e^-$ (d) $72e^-$
28. In the preparation of Na_2CO_3 which of the following is used as a raw material.
(a) Slaked lime (b) Limestone (c) Quicklime (d) NaOH
29. The attraction that an atom exerts on a pair of electrons that are being shared with another atom for forming covalent bond is referred to as its
(a) Ionisation energy (b) Valency
(c) Electron affinity (d) electro negativity
30. 16g of oxygen has same number of molecules as in
(a) 16g of CO (b) 28g of N_2 (c) 14g of N_2 (d) 2g of H_2
31. If a gas expands at constant temperature, it indicates that
a) KE of the molecules decreases
b) Pressure of the gas increases
c) KE of the molecules remain the same
d) Number of molecules of the gas increases
32. Which pair of atomic numbers represents s block elements?
(a) 7, 15 (b) 6, 12 (c) 9, 17 (d) 3, 12

BIOLOGY

33. Which of the following is seen only in prokaryotic cell?

- a) DNA
b) Ribosomes
c) Mesosomes
d) Dictyosomes

34. Cycas has an embryo with two cotyledons, yet it is not classified in dicots because:

- a) It looks like palm
b) Its ovules are naked
c) It has compound leaves
d) It bears megasporophyll

35. Study of fungi is known as

- a) Mycology
b) Phycology
c) Paleontology
d) Microbiology

36. Match the following and select the correct answer

LIST 1	LIST 2
Choanocytes	Platyhelminthes
Cnidoblasts	Ctenophora
Flame Cells	Porifera
Nephridia	Coelenterata
	Annelida

- a) A=iv B=ii C=I D=v
b) A=iv B=iii C=v D=i
c) A=iii B=iv C=I D=v
d) A=iii B=iv C=v D=i

37. The predominant substance found in the walls of Cork tissues

- (a) Suberian (b) Lignin (c) Pectin (d) Cutin

38. The mineral element which maintain ribosome structure

- (a) Sulphur (b) Calcium
(c) Magnesium (d) Molybdenum

39. The fruiting body of Agaricus is called

- (a) Mesocarp (b) Pseudocarp
(c) Ascocarp (d) Basidocarp

40. The anticoagulant secreted by leech

- (a) Heparin (b) Saliva (c) Hirudin (d) Haemolysin

COMPUTER SCIENCE

33. What is the 2's complement of -9?
(a) 1111 (b) 0111 (c) 0101 (d) 1101
34. Which of the following is a valid C++ identifier?
(a) int (b) 2a (c) rollnumber (d) x and y
35. Pick the odd one out of the following.
(a) for (b) while (c) switch (d) do while
36. In priority scheduling technique
(a) CPU is allocated to the process with highest priority
(b) CPU is allocated to the process with lowest priority
(c) equal priority processes cannot be scheduled
(d) None of the above
37. Which of the following statement is not true about preprocessor directives?
a) these are lines read and processed by the preprocessor
b) they do not produce any code by themselves
c) these must be written before main()
d) They end with a semicolon
38. Which of the following is /are not a valid array declaration(s)?
i. double X[0]
ii. int X[]={10,20};
iii. int X[][2]={1,2,3,4,5};
iv. double X[2][]= {1,2,3,4,5};
(a) Option iv (b) option iii
(c) option i & iv (d) option i
39. Predict the output assuming that the string inputted by the user is "Hello"

```
#include <iostream.h>
#include <string.h>
Void main ( )
{
Char str[20];
```

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```

Cout<<"enter string ";
Cin>>str;
Cout<<strrev(str)<<endl;
Cout<<strcat(strcat("!!",str),str)<<endl;
Cout<<str;
}

```

- (a) olleH
!!HelloHello
Hello
- (b) olleH
!!olleHolleH
olleH
- (c) olleH
Hello!!Hello
Hello
- (d) olleH
olleH!!olleH
olleH

40. Which of the following is used to typecast a variable of float data type into int .

- i) (float)variable name ;
ii)(int) variable name;
iii)float (variable name);
iv)int(variable name);

- (a) i & iii (b) ii & iv (c) ii (d) iv

GK

41. The 100th anniversary of Mahatma Gandhi's Sabarmathi ashram was celebrated in which country?

- (a) USA (b) UK (c) Russia (d) Pakistan

42. Which element is present in Vitamin B12?

- (a) Cobalt (b) Iron (c) Calcium (d) Magnesium

43. KasturiRangan report is in relation to

- a) Preservation of Indian wetlands
b) protection of flood plains of River Ganga
c) preservation of Himalayan belt
d) protection of biodiversity of Western Ghats

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44. The "smart pig device" is used for the inspection of which one of the following
- (a) Computer's virus
 - (b) gas pipeline
 - (c) ocean salinity
 - (d) soil fertility
45. 'Ice cube' satellite which maps global distribution of atmosphere ice is deployed by which of the following space agencies?
- a) The Indian Space Research Organisation (ISRO)
 - b) European Space Agency
 - c) The National Aeronautics and Space Administration (NASA)
 - d) The China National Space Administration

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IQ

46. I have a horse. Do you know what colour it is? Allen said "I guess it is not black." Brain said "it is either brown or grey". Charlie said "I know it is brown." I said, "Atleast one of you is right and atleast one of you is wrong". What is the colour of my horse? If the colour is one of the above?
- (a) black
 - (b) brown
 - (c) grey
 - (d) white
47. A six digit number 312132 has 2 ones, 2 twos, 2 threes. This has a very interesting attribute: one digit exist between 2 ones, 2 digit exist between 2 twos and 3 digits exist between 2 threes. Can we add 2 more 4s to become an 8 digit number and still holding the above attributes plus 4 digits exist between two 4s ?
- (a) 12132434
 - (b) 41312432
 - (c) 13124324
 - (d) 21341324
48. A group of friends went to a hotel for a dinner. After having their dinner, the bill amount was of Rs.2400. So they decided to distribute it into equal amount for each. In the group two friends forgot to bring their purses along with them. So later on it has been decided that Rs.100 has to be paid more by other friends on calculated amount. So total how many friends were there in the group?
- (a) 8
 - (b) 4
 - (c) 6
 - (d) 5
49. In a code language, ART is written as BSU. How to write 'DRIVER'?

- (a) ESJWFS (b) SJEWSF (c) EJWSSF (d) JEFFWS
50. 3,8,15,24, ___ next number of this pattern.
(a) 34 (b) 33 (c) 35 (d) 37

TIE BREAKER QUESTIONS

51. A satellite revolving in a circular orbit at a height h from earth's surface (radius of earth R , $h \ll R$) the minimum increase in its orbital velocity required so that the satellite could escape from the earth's gravitational field is close to

a. $\sqrt{2gR}$
b. \sqrt{gR}

c. $\sqrt{\frac{gR}{2}}$

d. $\sqrt{gR}(\sqrt{2} - 1)$