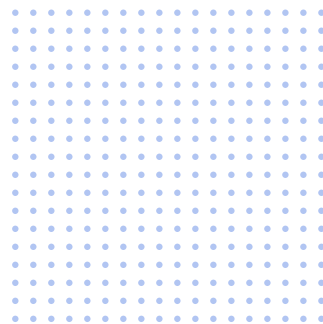




FOR JNU EE EXAM PREPARATION

JNU EE 2022

Question Paper · Ph.D Computational Biology and Bioinformatics - Part A (common)

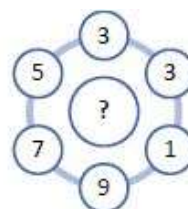
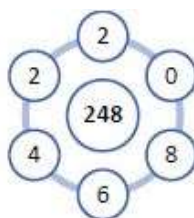
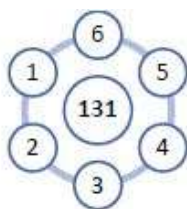
EXAM	YEAR	TYPE
JNU EE	2022	Question Paper

SUBJECT
Ph.D Computational Biology and Bioinformatics - Part A (common)

Test Date : 10 Dec 2022**Test Slot : Slot 1****Subject : TRCK-Computational Biology & Bioinformatics Part A Common****Sl. No.1****QBID:1072001**

There are 50 students admitted to a nursery class. Some students can speak only English and some can speak only Hindi. Ten students can speak both English and Hindi. If the number of students who can speak English is 21, then how many students can speak Hindi, how many can speak only Hindi and how many can speak only English?

1. 39, 29 and 11 respectively
2. 37, 27 and 13 respectively
3. 28, 18 and 22 respectively
4. 21, 11 and 29 respectively

(1) 1**(2) 2****(3) 3****(4) 4****1[Option ID=16801]****2[Option ID=16802]****3[Option ID=16803]****4[Option ID=16804]****Sl. No.2****QBID:1072002**

1. 132
2. 262
3. 274
4. 320

(1) 1**(2) 2****(3) 3****(4) 4****1[Option ID=16805]****2[Option ID=16806]****3[Option ID=16807]****4[Option ID=16808]****Sl. No.3****QBID:1072003**

The Head of the Department wishes to select four members of a faculty-student committee for another school level committee. The faculty-students committee consists of exactly four faculty members - K, L, M and N - and four students - P, Q, R and S. The Head can select any of the committee members as representatives as long as he observes the following restrictions:

- (i) The group of four representatives must consist of exactly two faculty members and two students.
- (ii) Either K or L must be one of the representatives but both K and L cannot be representatives.
- (iii) If P is a representative, M must also be a representative.
- (iv) If R is a representative, L cannot be a representative.

If neither Q nor S is a representative, which of the following is the pair of faculty members who must be representatives?

- 1. K and M
- 2. K and N
- 3. L and M
- 4. L and N

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16809]

2[Option ID=16810]

3[Option ID=16811]

4[Option ID=16812]

Sl. No.4

QBID:1072004

There is a relationship between the two terms to the left of :: and the same relationship holds between the two terms to its right. Find the correct option for the following.

BUCKET : ACTVBDJLDFSU :: BONUS : ?

- 1. *ACMNMOTVRT*
- 2. *ACNPMOTVRT*
- 3. *SUNOB*
- 4. *ACMNMOTURT*

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16813]

2[Option ID=16814]

3[Option ID=16815]

4[Option ID=16816]

Sl. No.5

QBID:1072005

A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8:00 am, at what time will he first touch a flag at 120 feet from the ground?

1. 4 pm
2. 5 pm
3. 6 pm
4. 7 pm

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16817]

2[Option ID=16818]

3[Option ID=16819]

4[Option ID=16820]

Sl. No.6

QBID:1072006

In the following, the two expressions on either side of the sign (=) will have the same value if two terms on either side or on the same side are interchanged. Find the correct terms to be interchanged in the following.

$$8 \div 2 \times 5 - 11 + 9 = 6 \times 2 - 5 + 4 \div 2$$

1. 5, 9
2. 8, 5
3. 9, 6
4. 11, 5

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16821]

2[Option ID=16822]

3[Option ID=16823]

4[Option ID=16824]

Sl. No.7

QBID:1072007

Which of the following is/are programming language?

- i) RUST
 - ii) Pymol
 - iii) COLBOL
 - iv) LATEX
1. Both i and ii
 2. Both i and iii
 3. Both iii and iv
 4. Only iv

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16825]

2[Option ID=16826]

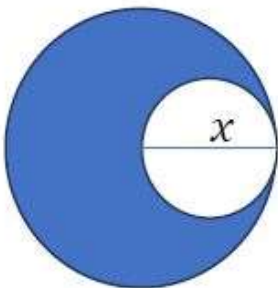
3[Option ID=16827]

4[Option ID=16828]

Sl. No.8

QBID:1072008

In the following figure, x is both the radius of the larger circle and the diameter of the smaller circle. The area of the shaded region is,



1. $\frac{3}{4}\pi x^2$

2. $\frac{\pi}{3}x^2$

3. $\frac{4}{3}\pi x^2$

4. $\frac{3}{2}\pi x^2$

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16829]

2[Option ID=16830]

3[Option ID=16831]

4[Option ID=16832]

Sl. No.9

QBID:1072009

What are the sides of a rectangle if

- a) The perimeter of the rectangle is 68
 - b) The diagonal of the rectangle is 26
1. 20 and 14
 2. 10 and 20
 3. 24 and 8
 4. 10 and 24

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16833]

2[Option ID=16834]

3[Option ID=16835]

4[Option ID=16836]

Sl. No.10

QBID:1072010

If the area of a circle decreases by 36% then the radius of the circle decreases by

1. 20%
2. 18%
3. 36%
4. 64%

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16837]

2[Option ID=16838]

3[Option ID=16839]

4[Option ID=16840]

Sl. No.11

QBID:1072011

Web client and servers communicate through

1. Transition Control Protocol
2. Web Interface
3. Transmission Control Protocol
4. Data Control Panel

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=16841]
 2[Option ID=16842]
 3[Option ID=16843]
 4[Option ID=16844]

Sl. No.12
 QBID:1072012

Two dices are tossed. The probability that the total score is a prime number is:

1. $\frac{1}{6}$
2. $\frac{5}{12}$
3. $\frac{1}{2}$
4. $\frac{7}{9}$

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16845]
 2[Option ID=16846]
 3[Option ID=16847]
 4[Option ID=16848]

Sl. No.13
 QBID:1072013

A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours. What will be the true time when the clock indicates 10 p.m on the 4th day?

1. 5 p.m
2. 6 p.m
3. 10 p.m
4. 11 p.m

- (1) 1
 (2) 2
 (3) 3
 (4) 4

1[Option ID=16849]
 2[Option ID=16850]
 3[Option ID=16851]
 4[Option ID=16852]

Sl. No.14
 QBID:1072014

A father said to his son, "I was as old as you are at present at the time of your birth". If the father's age is 38 years now, the son's age five years back was

1. 14 years
2. 19 years
3. 33 years
4. 38 years

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16853]
2[Option ID=16854]
3[Option ID=16855]
4[Option ID=16856]

Sl. No.15
QBID:1072015

In the series 2, 6, 18, 54, ... , what will be the 8th term ?

1. 4370
2. 4374
3. 7443
4. 7434

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16857]
2[Option ID=16858]
3[Option ID=16859]
4[Option ID=16860]

Sl. No.16
QBID:1072016

Find the current alternative by identifying the relation between the words given on one side of ::

Insert : Extract :: Mighty : ?

1. Thin
2. Strong
3. Frail
4. Feeble

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16861]
2[Option ID=16862]
3[Option ID=16863]
4[Option ID=16864]

Sl. No.17
QBID:1072017

Rajan is sixth from the left end and Vinay is tenth from the right end in a row of boys. If there are eight boys between Rajan and Vinay, how many boys are there in a row?

1. 23
2. 24
3. 25
4. 26

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16865]
2[Option ID=16866]
3[Option ID=16867]
4[Option ID=16868]

Sl. No.18
QBID:1072018

India's economic growth has come at a terrible price of increased industrial and vehicular pollution. Find the correct alternative for the following statements:

- A. Pollution is a part of industrial society.
 - B. Indian economic growth is based on only industrial growth.
 - C. A country desires economic growth with manageable side effects.
1. A is implicit only
 2. B is implicit only
 3. C is implicit only
 4. A and C are implicit only

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16869]
2[Option ID=16870]
3[Option ID=16871]
4[Option ID=16872]

Sl. No.19
QBID:1072019

In how many different ways can the letters of the word 'SOFTWARE' be arranged in such a way that the vowels always come together?

1. 4320
2. 720
3. 1440
4. 13440

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16873]

2[Option ID=16874]

3[Option ID=16875]

4[Option ID=16876]

Sl. No.20

QBID:1072020

Find the average of first twenty multiples of seven

1. 70
2. 57.8
3. 87.3
4. 73.5

- (1) 1
(2) 2
(3) 3
(4) 4

1[Option ID=16877]

2[Option ID=16878]

3[Option ID=16879]

4[Option ID=16880]