

National Testing Agency

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Bioinformatics

Group Number :	1
Group Id :	71087074
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	480
Is this Group for Examiner? :	No

Part A General Knowledge

Section Id :	710870220
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20

Number of Questions to be attempted :	20
Section Marks :	80
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870220
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 7108708821 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which one of the following crops is a commercial crop in Punjab and Haryana but is a subsistence crop in Orissa?

1. Tea
2. Cotton
3. Rubber
4. Rice

Options :

71087035281. 1
71087035282. 2
71087035283. 3
71087035284. 4

Question Number : 2 Question Id : 7108708822 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which of the following are the two most important wheat-growing zones of the country?

- A. Ganga-Satluj plains in the north-west
- B. Deltaic regions
- C. Black soil region of the Deccan
- D. Plains of north-east

Choose the **correct** answer from the options below:

- 1. Only A and B
- 2. Only B and C
- 3. Only C and D
- 4. Only A and C

Options :

- 71087035285. 1
- 71087035286. 2
- 71087035287. 3
- 71087035288. 4

Question Number : 3 Question Id : 7108708823 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Indian agriculture is typically characterized as

- 1. Land surplus, labour scarce economy
- 2. Land surplus, labour surplus economy
- 3. Land scarce, labour surplus economy
- 4. Land scarce, labour scarce economy

Options :

- 71087035289. 1

71087035290. 2

71087035291. 3

71087035292. 4

Question Number : 4 Question Id : 7108708824 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following countries is the main rival of India in tea export?

1. China
2. Japan
3. Germany
4. Sri Lanka

Options :

71087035293. 1

71087035294. 2

71087035295. 3

71087035296. 4

Question Number : 5 Question Id : 7108708825 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement A: MSP is declared by the government every year to provide incentives to the farmers for raising the production of crops.

Statement B: Buffer stock is created to distribute food grains in the deficit areas and among the poorer strata of the society at the lower price than the market price.

In light of the above statements, choose the **most appropriate** answer from the options given below

1. Both Statement A and Statement B are correct
2. Both Statement A and Statement B are incorrect
3. Statement A is correct but Statement B is incorrect
4. Statement A is incorrect but Statement B is correct

Options :

71087035297. 1

71087035298. 2

71087035299. 3

71087035300. 4

Question Number : 6 Question Id : 7108708826 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is a global association of nations of the world to help cooperation in international law, security, economic development and social equity?

1. United Nations Organization
2. International Monetary Fund
3. World Bank
4. World Health Organization

Options :

- 71087035301. 1
- 71087035302. 2
- 71087035303. 3
- 71087035304. 4

Question Number : 7 Question Id : 7108708827 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Under the Ganga Action Plan Phase II, pollution abatement works are being taken up in how many towns?

- 1. 57
- 2. 65
- 3. 52
- 4. 69

Options :

- 71087035305. 1
- 71087035306. 2
- 71087035307. 3
- 71087035308. 4

Question Number : 8 Question Id : 7108708828 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following statements is **incorrect**?

- 1. The highest number of pigs in the world are found in India
- 2. Uttar Pradesh provides largest amount of pork
- 3. Assam has the largest number of pork producing pigs
- 4. Pork constitutes about 7.6% of the total meat produced in India

Options :

71087035309. 1
71087035310. 2
71087035311. 3
71087035312. 4

Question Number : 9 Question Id : 7108708829 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which type of N-fertilizer is suitable for water-logged soils?

1. Zinc Phosphate
2. Ammonium Sulphate
3. Calcium
4. Potassium Nitrate

Options :

71087035313. 1
71087035314. 2
71087035315. 3
71087035316. 4

Question Number : 10 Question Id : 7108708830 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

The famous Bailadila range of hills in the Bastar district of Chhattisgarh is famous for its

1. Bauxite deposits
2. Manganese deposits
3. Copper deposits
4. High-grade haematite deposits

Options :

71087035317. 1

71087035318. 2

71087035319. 3

71087035320. 4

Question Number : 11 Question Id : 7108708831 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A farmer wishes to start a 100 sq. m rectangular vegetable garden. Since he has only 30m barbed wire, he fences three sides of the garden letting his house compound wall act as the fourth side fencing. What is the dimension of the garden?

1. 15 m x 6.67m
2. 20 m x 5 m
3. 30 m x 3.33 m
4. 40 m x 2.5 m

Options :

71087035321. 1

71087035322. 2

71087035323. 3

71087035324. 4

Question Number : 12 Question Id : 7108708832 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In which one of the following industries, the consumption of natural rubber is the largest?

1. Auto tyres and tubes
2. Footwear
3. Dipped goods
4. Latex foam

Options :

71087035325. 1
71087035326. 2
71087035327. 3
71087035328. 4

Question Number : 13 Question Id : 7108708833 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following countries was the partner country of 34th Surajkund International Crafts Fair held in Haryana?

1. China
2. Nepal
3. Bhutan
4. Uzbekistan

Options :

71087035329. 1
71087035330. 2
71087035331. 3
71087035332. 4

Question Number : 14 Question Id : 7108708834 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Nobel laureate Abhijit Vinayak Banerjee was conferred the honorary Doctor of Letters (D. Litt.) by which University?

1. University of Delhi
2. University of Kolkata
3. University of Mumbai
4. University of Hyderabad

Options :

- 71087035333. 1
- 71087035334. 2
- 71087035335. 3
- 71087035336. 4

Question Number : 15 Question Id : 7108708835 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Where is the headquarters of European Union?

- 1. Geneva, Switzerland
- 2. Washington D.C., USA
- 3. New York, US
- 4. Brussels, Belgium

Options :

- 71087035337. 1
- 71087035338. 2
- 71087035339. 3
- 71087035340. 4

Question Number : 16 Question Id : 7108708836 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following would be deficient if one finds high somatic cell count in the cow's milk?

- 1. Butterfat
- 2. Whey protein
- 3. Casein
- 4. Trace minerals

Options :

- 71087035341. 1
- 71087035342. 2
- 71087035343. 3
- 71087035344. 4

Question Number : 17 Question Id : 7108708837 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Who was the first administrator-statesman to attempt planning as a means for economic development?

- 1. C. Rajagopalachari
- 2. V. T. Krishnamachari
- 3. M. Viswesvarayya
- 4. Sir C. P. Ramaswami Aiyar

Options :

- 71087035345. 1
- 71087035346. 2
- 71087035347. 3
- 71087035348. 4

Question Number : 18 Question Id : 7108708838 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Amazon rainforest span over nine countries. In August 2019, in which country did a deadly fire broke out in the Amazon forest?

- 1. Brazil
- 2. Venezuela
- 3. Colombia
- 4. Argentina

Options :

- 71087035349. 1
- 71087035350. 2
- 71087035351. 3
- 71087035352. 4

Question Number : 19 Question Id : 7108708839 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Economic liberalization in India started with

- 1. Sustainable changes in industrial licensing policy
- 2. The convertibility of the Indian Rupee
- 3. Significant reduction of tax rates
- 4. Changes in procedural formalities for FDI

Options :

- 71087035353. 1
- 71087035354. 2
- 71087035355. 3
- 71087035356. 4

Question Number : 20 Question Id : 7108708840 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The term 'Delimitation' which was in news recently is associated with which process?

- 1. Fixing the limit of Income tax
- 2. Fixing limits of Affordable housing
- 3. Fixing limits of Territorial constituencies
- 4. Fixing limits of Chairpersons salary

Options :

- 71087035357. 1

71087035358. 2
71087035359. 3
71087035360. 4

Part B Core Agricultural Statistics

Section Id :	710870221
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870221
Question Shuffling Allowed :	Yes

**Question Number : 21 Question Id : 7108708841 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is
Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1**

A user is receiving a legitimate email. On opening the email, the user is asked to supply some personal details or click on given link. This type of email is called

1. War driving
2. Pharming
3. Spyware
4. Phishing

Options :

71087035361. 1

71087035362. 2

71087035363. 3

71087035364. 4

Question Number : 22 Question Id : 7108708842 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Virtual memory is a hierarchy of two memory systems - main memory and secondary memory. The two systems are managed by a software system in such a way that it appears that the main memory is of a bigger size. The secondary memory in this case is

1. Faster, Costlier and Larger
2. Slower, Cheaper and Smaller
3. Slower, Cheaper and Larger
4. None of the above

Options :

71087035365. 1

71087035366. 2

71087035367. 3

71087035368. 4

Question Number : 23 Question Id : 7108708843 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In binary arithmetic, negative numbers may be represented using either a sign-magnitude or a complement representation. In the case of sign-magnitude representation, which of the following is correct?

1. 1 is used to represent positive sign and 0 to represent negative sign
2. 1 is used to represent negative sign and 0 to represent positive sign
3. Either Option 1 or Option 2 above can be used
4. None of the above

Options :

- 71087035369. 1
- 71087035370. 2
- 71087035371. 3
- 71087035372. 4

Question Number : 24 Question Id : 7108708844 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A commonly used controlled switch is a transistor which is fabricated using Silicon. One useful component is MOSFET. What is its full form?

- 1. Magnesium Oxide Silicon Field Effect Transistor
- 2. Mineral Oxide Silicon Field Effect Transistor
- 3. Metal Oxide Silicon Field Effect Transistor
- 4. None of the above

Options :

- 71087035373. 1
- 71087035374. 2
- 71087035375. 3
- 71087035376. 4

Question Number : 25 Question Id : 7108708845 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In Object-oriented programming, the constructors are used to

- 1. Call a method
- 2. Initialize the variables of class
- 3. Save the memory
- 4. Call multiple methods together

Options :

71087035377. 1

71087035378. 2

71087035379. 3

71087035380. 4

Question Number : 26 Question Id : 7108708846 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In DBMS, the number of additions/deletions made to a file over a period of time is called

1. File activity ratio
2. Inquiry capability
3. File volatility
4. Response time

Options :

71087035381. 1

71087035382. 2

71087035383. 3

71087035384. 4

Question Number : 27 Question Id : 7108708847 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In Computer Networking, what is NOT true in case of packet switching?

- A. Packets are despatched by a sender to a receiver. Each packet travels independently from source to the specified destination
- B. It improves the utilization of communication networks and also provides fault tolerance
- C. Each packet may follow a different route to reach a receiver
- D. Files of data to be transmitted are broken into packets, with 1 Kbytes of data in each packet
- E. Each packet has a serial number, IP addresses of sender and receiver and error control bits

Choose the correct answer from the options given below

- 1. A and B only
- 2. A, B and C only
- 3. B and C only
- 4. All - A, B, C, D and E

Options :

- 71087035385. 1
- 71087035386. 2
- 71087035387. 3
- 71087035388. 4

Question Number : 28 Question Id : 7108708848 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following statements are true in case of "view" in DBMS?

- A. It is a logical window to see the results of operations on one or more tables or views
- B. It is a virtual table
- C. Views are derived from stored data structures and computed again for each query referring to them
- D. An example of a SQL statement for creating a view is "CREATE VIEW AS SELECT ECODE, ENAME FROM EMP"

Choose the correct answer from the options given below:

- 1. A and C only
- 2. B and C only
- 3. A, B, C and D only
- 4. B, C and D only

Options :

- 71087035389. 1
- 71087035390. 2
- 71087035391. 3
- 71087035392. 4

Question Number : 29 Question Id : 7108708849 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In the case of Boolean Algebra, which of the following statements is true?

A. $X + \bar{X} = 1$

B. $X \cdot \bar{X} = 0$

C. $X \cdot Y = Y \cdot X$

D. $X \cdot 1 = X$

E. $X + 0 = X$

Choose the correct answer from the options given below

1. A, B, C and D only
2. B, C, D and E only
3. C, D and E only
4. All - A, B, C, D and E

Options :

71087035393. 1

71087035394. 2

71087035395. 3

71087035396. 4

Question Number : 30 Question Id : 7108708850 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In order to make the user-defined data types so that it gets the ability to provide the operators with a special meaning is called

- A. Method overloading
- B. Method overriding
- C. Constructor overloading
- D. Operator overloading

Choose the correct answer from the options given below

- 1. A only
- 2. B only
- 3. C only
- 4. D only

Options :

- 71087035397. 1
- 71087035398. 2
- 71087035399. 3
- 71087035400. 4

Question Number : 31 Question Id : 7108708851 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following are INCORRECT statements in the case of firewalls?

- A. To prevent unauthorized access to an organization's network, a barrier is called firewalls
- B. Packet filter firewalls block suspicious incoming packets from unknown IP addresses
- C. There is no firewall software available these days
- D. Application firewalls filter viruses, unwanted emails and application programs which are not authorized

Choose the correct answer from the options given below:

- 1. A only
- 2. B only
- 3. C only
- 4. D only

Options :

- 71087035401. 1
- 71087035402. 2
- 71087035403. 3
- 71087035404. 4

Question Number : 32 Question Id : 7108708852 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Selective or total information hiding	I. Abstraction
B. Object's characteristics broken into manageable chunks as defined in the class description	II. Inheritance
C. Initialize variables of the class	III. Encapsulation
D. An effective method of code reuse	IV. Constructor

Chose the correct answer from the options given below:

1. A - III, B - I, C - IV, D - II
2. A - II, B - III, C - I, D - IV
3. A - II, B - III, C - IV, D - I
4. A-III, B-IV, C-I, D-II

Options :

- 71087035405. 1
- 71087035406. 2
- 71087035407. 3
- 71087035408. 4

Question Number : 33 Question Id : 7108708853 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Internet is growing so fast that the 32-bits for IPV₄ would be insufficient, therefore 128-bit address IPV₆ has been standardized

Statement II: IPV₆ also has provision to prioritize data packets and built-in security

In light of the above statements, choose the ***most appropriate*** answer from the options given below

1. Both Statements I and Statement II are correct
2. Both Statements I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Options :

- 71087035409. 1
- 71087035410. 2
- 71087035411. 3
- 71087035412. 4

Question Number : 34 Question Id : 7108708854 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Tools for lexical analysis and syntax analysis are LEX and YACC

Statement II: YACC identifies tokens

In light of the above statements, choose the ***most appropriate*** answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Options :

71087035413. 1

71087035414. 2

71087035415. 3

71087035416. 4

Question Number : 35 Question Id : 7108708855 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Unshielded twisted pair (UTP) of wires is an inexpensive medium used in voice-grade telephone lines

Statement II: Fiber optic cables are plastic or glass fibers and provide higher quality transmission signals

In light of the above statements, choose the **most appropriate** answer from the options given below

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Options :

- 71087035417. 1
- 71087035418. 2
- 71087035419. 3
- 71087035420. 4

Question Number : 36 Question Id : 7108708856 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Level of significance is equal to

1. Probability of committing Type I error
2. Probability of committing Type II error
3. Probability of correct decision
4. Probability of not making correct decision

Options :

- 71087035421. 1
- 71087035422. 2

71087035423. 3

71087035424. 4

Question Number : 37 Question Id : 7108708857 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A bivariate normal distribution is considered. A hypothesis would be simple if the number of specified parameters is

1. 2
2. 3
3. 4
4. 5

Options :

71087035425. 1

71087035426. 2

71087035427. 3

71087035428. 4

Question Number : 38 Question Id : 7108708858 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Fairfield Smith Index is related to

1. Number of plots in an experiment
2. Shape and size of plots in an experiment
3. Corrections for moments
4. χ^2 - test for homogeneity

Options :

71087035429. 1

71087035430. 2

71087035431. 3

71087035432. 4

Question Number : 39 Question Id : 7108708859 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In an experiment, some of the treatment effects are mixed up with block effects. What is the name of such experiments?

1. Missing plot technique
2. Confounded design
3. Non-orthogonal design
4. Orthogonal design

Options :

71087035433. 1
71087035434. 2
71087035435. 3
71087035436. 4

Question Number : 40 Question Id : 7108708860 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

How many mutually orthogonal Latin squares are available for strength 6?

1. 7
2. 2
3. 5
4. 1

Options :

71087035437. 1
71087035438. 2
71087035439. 3
71087035440. 4

Question Number : 41 Question Id : 7108708861 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The efficiency factor of BIB design (v, b, r, k, λ) will be

1. $r k / \lambda v$
2. $\lambda v / r k$
3. $r \lambda / v k$
4. $\lambda r / b k$

Options :

71087035441. 1
71087035442. 2
71087035443. 3
71087035444. 4

Question Number : 42 Question Id : 7108708862 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Who is (are) the author of the book "Design and Analysis of Experiments"?

1. M.N. Das and N.C. Giri
2. D. Raghav Rao
3. Aloke Dey and Ashis Das
4. P.K Sahu and A.K. Das

Options :

71087035445. 1
71087035446. 2
71087035447. 3
71087035448. 4

Question Number : 43 Question Id : 7108708863 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A pilot survey is conducted for studying

1. Only the sampling errors
2. The bias due to personal prejudice of the investigator
3. Data collected on income or opinion
4. The magnitude of problems that might be encountered

Options :

71087035449. 1

71087035450. 2

71087035451. 3

71087035452. 4

Question Number : 44 Question Id : 7108708864 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A population of 108 persons is divided into three strata whose sizes are 24, 36 and 48 respectively. In proportional allocation, the number of persons selected from the second stratum when the sample size is 18 will be

1. 4
2. 6
3. 8
4. 10

Options :

71087035453. 1

71087035454. 2

71087035455. 3

71087035456. 4

Question Number : 45 Question Id : 7108708865 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Let there be a population of size 50 with zero variance. The minimum sample size required to estimate the correct population mean is

1. 50
2. 25
3. 2
4. 1

Options :

71087035457. 1

71087035458. 2

71087035459. 3

71087035460. 4

Question Number : 46 Question Id : 7108708866 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A border check post stops every passenger van. Which one of the following procedures is applied?

1. Simple random sampling
2. Stratified random sampling
3. Cluster sampling
4. Complete enumeration

Options :

71087035461. 1

71087035462. 2

71087035463. 3

71087035464. 4

Question Number : 47 Question Id : 7108708867 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If $X_i \sim N(\mu, \sigma^2)$, where σ^2 is known, then the 95 % confidence interval for μ based on sample size n is

1. $\bar{x} \pm 1.00 \frac{\sigma}{\sqrt{n}}$
2. $\bar{x} \pm 1.96 \frac{\sigma}{\sqrt{n}}$
3. $\bar{x} \pm 2.00 \frac{\sigma}{\sqrt{n}}$
4. $\bar{x} \pm 2.58 \frac{\sigma}{\sqrt{n}}$

Options :

71087035465. 1

71087035466. 2

71087035467. 3

71087035468. 4

Question Number : 48 Question Id : 7108708868 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If two regression lines are $Y = 2X$ and $8X = Y$ then the correlation coefficient between X and Y is

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

Options :

71087035469. 1

71087035470. 2

71087035471. 3

71087035472. 4

Question Number : 49 Question Id : 7108708869 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In order to reduce the standard error of mean to 25% of its present value, the sample size n should be increased to

1. $2n$

2. $4n$

3. $8n$

4. $16n$

Options :

71087035473. 1

71087035474. 2

71087035475. 3

71087035476. 4

Question Number : 50 Question Id : 7108708870 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The intra-class correlation coefficient, computed for k groups, each having n units lie between

1. -1 and 1

2. $-\frac{1}{n-1}$ and 1

3. $\frac{1}{n-1}$ and 1

4. $-\frac{1}{n-1}$ and $\frac{1}{n-1}$

Options :

71087035477. 1

71087035478. 2

71087035479. 3

71087035480. 4

Question Number : 51 Question Id : 7108708871 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The marks obtained by 10 students in a test are 70, 65, 68, 70, 75, 73, 80, 70, 83, 86. The mode is

1. 70
2. 73
3. 86
4. 71.5

Options :

71087035481. 1

71087035482. 2

71087035483. 3

71087035484. 4

Question Number : 52 Question Id : 7108708872 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The variance of a binomial distribution with $n = 10$ and $p = \frac{1}{3}$ is

1. $\frac{10}{3}$
2. $\frac{10}{9}$
3. $\frac{20}{3}$
4. $\frac{20}{9}$

Options :

71087035485. 1

71087035486. 2

71087035487. 3

71087035488. 4

Question Number : 53 Question Id : 7108708873 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Two events A and B are mutually exclusive. Then $P(AB)$

1. $P(A) \cdot P(B)$
2. $P(A) + P(B)$
3. $P(A)$
4. Zero

Options :

71087035489. 1

71087035490. 2

71087035491. 3

71087035492. 4

Question Number : 54 Question Id : 7108708874 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

For testing the goodness of fit, which test is used?

1. χ^2 - test
2. t - test
3. F - test
4. Z - test

Options :

71087035493. 1

71087035494. 2

71087035495. 3

71087035496. 4

Question Number : 55 Question Id : 7108708875 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If the geometric and harmonic means of two numbers are 28 and 16 respectively, then their arithmetic mean would be

1. 22
2. 28
3. 16
4. 49

Options :

71087035497. 1
71087035498. 2
71087035499. 3
71087035500. 4

Question Number : 56 Question Id : 7108708876 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The enzyme involved in cDNA library construction is

1. Reverse transcriptase
2. Reverse trivertase
3. Reverse helicase
4. Reverse ligase

Options :

71087035501. 1
71087035502. 2
71087035503. 3
71087035504. 4

Question Number : 57 Question Id : 7108708877 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The unit of measurement between two genes in linkage map is

1. Centimeter
2. Millimeter
3. Number of bases
4. Centi-Morgan

Options :

71087035505. 1
71087035506. 2
71087035507. 3
71087035508. 4

Question Number : 58 Question Id : 7108708878 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The technology used to modify the browning in mushroom for commercial use

1. Gene sequence
2. Gene editing
3. Gene addition
4. Genetic transformation

Options :

71087035509. 1
71087035510. 2
71087035511. 3
71087035512. 4

Question Number : 59 Question Id : 7108708879 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Examples for primary nucleotide sequence database - I. Genebank; II. EMBL; III. FASTA; IV. PROSITE

1. I and II
2. I and III
3. II and III
4. II and IV

Options :

71087035513. 1
71087035514. 2
71087035515. 3
71087035516. 4

Question Number : 60 Question Id : 7108708880 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The term bioinformatics was coined by

1. Robert Ledley, 1978
2. David W Mount, 1977
3. Paulien Hogweg, 1979
4. Jonathan Pevsner, 1965

Options :

71087035517. 1
71087035518. 2
71087035519. 3
71087035520. 4

Question Number : 61 Question Id : 7108708881 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Genome size of rice is

1. 120 Mb
2. 130 Mb
3. 450 Mb
4. 350 Mb

Options :

71087035521. 1
71087035522. 2
71087035523. 3
71087035524. 4

Question Number : 62 Question Id : 7108708882 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Phred score is related to

1. Base calling program
2. Pair wise alignment
3. Scaffolds
4. Contigs

Options :

71087035525. 1
71087035526. 2
71087035527. 3
71087035528. 4

Question Number : 63 Question Id : 7108708883 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Transition occurs usually between

1. A to G
2. A to C
3. G to C
4. G to T

Options :

71087035529. 1
71087035530. 2
71087035531. 3
71087035532. 4

Question Number : 64 Question Id : 7108708884 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The algorithm used to calculate positive and negative selection across individual branches of tree

1. Kimura
2. Maximum likelihood
3. PAUP
4. Neighbour joining

Options :

71087035533. 1
71087035534. 2
71087035535. 3
71087035536. 4

Question Number : 65 Question Id : 7108708885 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Scaffolds are also called

1. Reads
2. Contigs
3. DNA Fragments
4. Super Contigs

Options :

71087035537. 1
71087035538. 2
71087035539. 3
71087035540. 4

Question Number : 66 Question Id : 7108708886 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following search tools is used to align long genomic sequences of a variety of organisms?

1. Blast P
2. Blast-n
3. tblast-n
4. Blast-Z

Options :

71087035541. 1
71087035542. 2
71087035543. 3
71087035544. 4

Question Number : 67 Question Id : 7108708887 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is true?

1. Protein sequences are preferable to DNA sequences because they are more conserved
2. DNA sequences are preferable to protein sequences because they are more conserved
3. Proteins sequences are less preferable to DNA sequences because they are less conserved
4. DNA sequences are preferable to protein sequences because they are less conserved

Options :

71087035545. 1

71087035546. 2

71087035547. 3

71087035548. 4

Question Number : 68 Question Id : 7108708888 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The database related to diabetes is

1. SGD
2. TiD Base
3. Human
4. Pancreas

Options :

71087035549. 1

71087035550. 2

71087035551. 3

71087035552. 4

Question Number : 69 Question Id : 7108708889 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Identify the correct order of SCOP hierarchy for structural classification of protein

1. Class, Fold, Family, Super-family
2. Super-family, Family, Fold, Class
3. Class, Fold, Super-family, Family
4. Family, Super-family, Fold, Class

Options :

71087035553. 1

71087035554. 2

71087035555. 3

71087035556. 4

Question Number : 70 Question Id : 7108708890 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Tool to identify the sequence of homology in rat, humans, rice and fungi

1. Rasmol
2. Clustal W
3. Blast n
4. Chime

Options :

71087035557. 1

71087035558. 2

71087035559. 3

71087035560. 4

Part C Bioinformatics

Section Id :

710870222

Section Number :

3

Section type :

Online

Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870222
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 7108708891 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The genetic code is a triplet and the termination codons are

- A. AUG
- B. UAG
- C. UAA
- D. UGA

Choose the correct answer from the options given below:

- 1. A
- 2. A and B
- 3. B and C
- 4. B, C and D

Options :

- 71087035561. 1
- 71087035562. 2
- 71087035563. 3

71087035564. 4

Question Number : 72 Question Id : 7108708892 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Non-sense codon	I. Valine
B. GUG	II. Bacteriophage
C. Feulgen	III. Termination codon
D. DNA sequence	IV. Chromosomal DNA

Choose the correct answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A-IV, B-I, C-II, D-III
3. A - III, B - I, C - IV, D - II
4. A - II, B - III, C - I, D - IV

Options :

71087035565. 1

71087035566. 2

71087035567. 3

71087035568. 4

Question Number : 73 Question Id : 7108708893 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Mechanism of DNA replication may be considered a direct consequence of the DNA structure. Each polynucleotide chain serves as a template for synthesis of new DNA molecule

Reason R: DNA is synthesized by enzymes called DNA polymerase which are also required for DNA repair. The replication is semiconservative

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

Options :

71087035569. 1

71087035570. 2

71087035571. 3

71087035572. 4

Question Number : 74 Question Id : 7108708894 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following are examples of restriction enzymes to cut the DNA at specific places and produce sticky ends for annealing with any fragment?

A. E CO R I

B. Bam I

C. Hae III

D. ECO R V

Choose the correct answer from the options given below

1. A, B and C

2. B, C and D

3. A, C and D

4. A, B and D

Options :

71087035573. 1

71087035574. 2

71087035575. 3

71087035576. 4

Question Number : 75 Question Id : 7108708895 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The software used for genome mapping in plants and animals

1. HMM

2. Q gene

3. Gen Scan

4. Gene gun

Options :

71087035577. 1
71087035578. 2
71087035579. 3
71087035580. 4

Question Number : 76 Question Id : 7108708896 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: DNA polymerase proceeds in 5' to 3' direction only

Reason R: DNA synthesis is discontinuous in the lagging strand. Short pieces of replicating DNA are called Okasaki fragments

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

Options :

71087035581. 1
71087035582. 2
71087035583. 3
71087035584. 4

Question Number : 77 Question Id : 7108708897 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The first organism to be completely sequenced was bacteriophage and its size was

1. 5200 bp
2. 5375 bp
3. 5305 bp
4. 5102 bp

Options :

71087035585. 1
71087035586. 2
71087035587. 3
71087035588. 4

Question Number : 78 Question Id : 7108708898 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following methods are used to study the genetic linkage in perennials or germplasm lines?

1. Linkage mapping
2. Association mapping
3. Genetic mapping
4. Germplasm analysis

Options :

71087035589. 1
71087035590. 2
71087035591. 3
71087035592. 4

Question Number : 79 Question Id : 7108708899 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

By which of the following studies can gene expression of rice in drought conditions be elucidated?

1. Chromosome walking
2. cDNA analysis
3. Cell cycle
4. DNA marker

Options :

71087035593. 1
71087035594. 2
71087035595. 3
71087035596. 4

Question Number : 80 Question Id : 7108708900 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Genetic engineering	I. Genetic transformation
B. Transcription	II. Gene editing
C. Mushroom browning	III. Restriction enzyme
D. Golden rice	IV. RNA

Choose the correct answer from the options given below:

1. A - II, B - III, C - IV, D - I
2. A - III, B - IV, C - II, D - I
3. A - III, B - I, C - IV, D - II
4. A - II, B - I, C - III, D - IV

Options :

71087035597. 1

71087035598. 2

71087035599. 3

71087035600. 4

Question Number : 81 Question Id : 7108708901 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following is used to identify the complimentary DNA bases?

1. Gene Bank
2. NR DB
3. Uni STS
4. Swiss prot

Options :

71087035601. 1

71087035602. 2

71087035603. 3

71087035604. 4

Question Number : 82 Question Id : 7108708902 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The study related to the interaction of cells, tissue and organism

1. Molecular biology
2. Systems biology
3. Cell biology
4. Genetics

Options :

71087035605. 1

71087035606. 2

71087035607. 3

71087035608. 4

Question Number : 83 Question Id : 7108708903 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Choose the correct statements about BLOCKS from the following

- A. BLOCKS are conserved ungapped patterns approximately 3 - 60 amino acids in length
- B. BLOCKS are conserved gapped patterns approximately 5 - 50 amino acids in length
- C. BLOCKS are conserved ungapped patterns approximately more than 100 amino acids in length
- D. BLOCKS are conserved gapped patterns approximately 3 - 20 amino acids in length

Choose the correct answer from the options given below:

- 1. A only
- 2. B only
- 3. A and C only
- 4. B and D only

Options :

- 71087035609. 1
- 71087035610. 2
- 71087035611. 3
- 71087035612. 4

Question Number : 84 Question Id : 7108708904 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The NCBI programme optimized for rapid alignment of very large DNA queries with a word size of 28 to 64

1. Psi Blast
2. Mega Blast
3. Blast n
4. PHI Blast

Options :

71087035613. 1
71087035614. 2
71087035615. 3
71087035616. 4

Question Number : 85 Question Id : 7108708905 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The functional region in a protein structure represents the active site and has a short pattern of amino acids

1. Co factor
2. Motif
3. Helix
4. β Sheets

Options :

71087035617. 1
71087035618. 2
71087035619. 3
71087035620. 4

Question Number : 86 Question Id : 7108708906 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Orthologs	I. Genes in similar organisms by gene duplication
B. Paralogs	II. Genes due to horizontal gene transfer
C. Homologs	III. Genes in two or more organisms
D. Xenologs	IV. Gene from a common ancestor

Choose the correct answer from the options given below:

1. A - III, B - I, C - II, D - IV
2. A - II, B - III, C - IV, D - I
3. A - III, B - I, C - IV, D - II
4. A - IV, B - III, C - I, D - II

Options :

71087035621. 1
71087035622. 2
71087035623. 3
71087035624. 4

Question Number : 87 Question Id : 7108708907 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The Ramachandran map of a protein allows identification of

1. Most stable structure
2. Tertiary allowed structure
3. Secondary structure elements
4. Serially disallowed conformations

Options :

71087035625. 1
71087035626. 2
71087035627. 3

71087035628. 4

Question Number : 88 Question Id : 7108708908 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Identify the correct statements about repetitive elements in organisms

- A. Interspersed repetitive sequences account for a few per cent in *Drosophila*
- B. Interspersed repetitive sequences account for more than 50 per cent in humans
- C. Interspersed repetitive sequences account for 90 per cent in yeast
- D. LINE is a class of repetitive sequences

Choose the correct answer from the options given below:

- 1. A only
- 2. A, B and C only
- 3. B, C and D only
- 4. A, B and D only

Options :

- 71087035629. 1
- 71087035630. 2
- 71087035631. 3
- 71087035632. 4

Question Number : 89 Question Id : 7108708909 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The phenomenon whereby some genes give rise to multiple different transcripts is called

1. Restriction enzyme activity
2. Alternative splicing
3. Translation modification
4. Complimentary transcripts

Options :

71087035633. 1

71087035634. 2

71087035635. 3

71087035636. 4

Question Number : 90 Question Id : 7108708910 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. PRINTS	I. EMBL - EBI
B. Webin	II. DIP
C. Genome browser	III. Fingerprints
D. IMex consortium	IV. UCSC

Choose the correct answer from the options given below

1. A - I, B - II, C - IV, D - III
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - IV, B - III, C - I, D - II

Options :

71087035637. 1

71087035638. 2

71087035639. 3

71087035640. 4

Question Number : 91 Question Id : 7108708911 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following statement(s) are correct regarding HMM?

- A. It assesses the likelihood of matches, mismatches, indels at a given position of an alignment
- B. It is a non-probabilistic model and aligns efficiently
- C. The states can be observed directly
- D. It is most widely used in non-signal detection problems

Choose the correct answer from the options given below:

- 1. A only
- 2. A and B
- 3. A and C
- 4. B, C and D

Options :

- 71087035641. 1
- 71087035642. 2
- 71087035643. 3
- 71087035644. 4

Question Number : 92 Question Id : 7108708912 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Clade	I. DNA sequences
B. OTU	II. DNA sequencing method
C. UNrooted tree	III. Group of taxa
D. Sanger	IV. No evolutionary pattern

Choose the correct answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

71087035645. 1
71087035646. 2
71087035647. 3
71087035648. 4

Question Number : 93 Question Id : 7108708913 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A transversion occurs between which of the following DNA bases?

1. A to G
2. G to A
3. T to C
4. A to C

Options :

71087035649. 1
71087035650. 2
71087035651. 3

71087035652. 4

Question Number : 94 Question Id : 7108708914 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Select the correct statement(s) from the following:

- A. The third position of codon has higher substitution than others
- B. Gamma distribution is used to model a continuous variable that has a skewed distribution
- C. Transition rate is lower than transversion rate in eukaryotes
- D. Non-coding RNAs often have functional constraints such as stem and loop structures

Choose the correct answer from the options given below:

- 1. A and B
- 2. A, B and C
- 3. A, B and D
- 4. B and C

Options :

- 71087035653. 1
- 71087035654. 2
- 71087035655. 3
- 71087035656. 4

Question Number : 95 Question Id : 7108708915 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following is a distance-based method of Phylogeny?

1. UPGMA
2. Kimura
3. Maximum Parsimony
4. MEGA

Options :

71087035657. 1
71087035658. 2
71087035659. 3
71087035660. 4

Question Number : 96 Question Id : 7108708916 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The programme which identifies homologous but distantly related proteins

- A. cDNA libraries can be constructed from RNA
- B. Expressed sequence tags are usually 500-1000 bp in length
- C. SAGE can be used to compare the abundance of transcripts
- D. RNAi can suppress the activity of a gene

Choose the correct answer from the options given below:

1. A and B
2. B and C
3. A, B and C
4. A, B, C and D

Options :

71087035661. 1

71087035662. 2

71087035663. 3

71087035664. 4

Question Number : 97 Question Id : 7108708917 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Raw and processed microarray data are deposited in which of the following databases?

1. GEO
2. Array clean
3. Microbase
4. RNA base

Options :

71087035665. 1

71087035666. 2

71087035667. 3

71087035668. 4

Question Number : 98 Question Id : 7108708918 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In which of the following DNA sequencing methods, only one dNTP is added into the reaction at a time?

1. Sanger sequencing
2. Maxam Gilbert method
3. Pyro sequencing
4. WGS

Options :

71087035669. 1

71087035670. 2

71087035671. 3

71087035672. 4

Question Number : 99 Question Id : 7108708919 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Techniques for recombination mapping in plants and non-human animals are more flexible and in many cases offer increased power to map QTL

Reason R: Quantitative traits are controlled by polygenes and located in different chromosomes

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

Options :

71087035673. 1

71087035674. 2

71087035675. 3

71087035676. 4

Question Number : 100 Question Id : 7108708920 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following is the program developed at the University of Washington to read the raw sequence trace?

1. Contig assembler
2. Base pair calling
3. Phred
4. MIRA

Options :

71087035677. 1
71087035678. 2
71087035679. 3
71087035680. 4

Question Number : 101 Question Id : 7108708921 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Margaret Dayhoff was associated with which of the following work?

1. DNA sequencing
2. Protein sequencing
3. Peptide analysis
4. Protein Atlas

Options :

71087035681. 1
71087035682. 2
71087035683. 3
71087035684. 4

Question Number : 102 Question Id : 7108708922 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following methods is used to predict the 3D structure of proteins where prior knowledge of similarity/alignment is not available?

1. Homology modelling
2. Ab-initio approach
3. Structure modelling
4. Comparative modelling

Options :

71087035685. 1
71087035686. 2
71087035687. 3
71087035688. 4

Question Number : 103 Question Id : 7108708923 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which method is used to find the most stable conformation in molecular dynamics?

1. Born-Oppenheimer approximation
2. Saddle point
3. Metropolis Algorithm
4. Robetta

Options :

71087035689. 1
71087035690. 2
71087035691. 3
71087035692. 4

Question Number : 104 Question Id : 7108708924 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Select the correct statement(s) from the following:

- A. A tRNA folds into a cloverleaf structure
- B. The beta-sheet is a coiled structure stabilized by intra-chain hydrogen bonds
- C. A form is the most stable structure of DNA under physiological conditions
- D. Two cysteine amino acid form disulphide bonds in proteins

Choose the correct answer from the options given below:

- 1. A and B
- 2. A and D
- 3. A, B and D
- 4. B, C and D

Options :

- 71087035693. 1
- 71087035694. 2
- 71087035695. 3
- 71087035696. 4

Question Number : 105 Question Id : 7108708925 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Lectins	I. Closed DNA
B. Globular proteins	II. Protein folding
C. Super coiling	III. Bind to carbohydrate
D. Chaperons	IV. Water-soluble

Choose the correct answer from the options given below:

1. A - III, B - I, C - IV, D - II
2. A - II, B - III, C - IV, D - I
3. A - III, B - IV, C - I, D - II
4. A - II, B - IV, C - I, D - III

Options :

71087035697. 1

71087035698. 2

71087035699. 3

71087035700. 4

Question Number : 106 Question Id : 7108708926 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A random sample of size n is taken from a population of size N . What is the variance of the sample mean, if sampling is done without replacement?

1. σ^2/n
2. σ/n
3. $\left(\frac{N-1}{n-1}\right)\frac{\sigma^2}{n}$
4. $(N-1)\frac{\sigma^2}{n^2}$

Options :

71087035701. 1
71087035702. 2
71087035703. 3
71087035704. 4

Question Number : 107 Question Id : 7108708927 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following is a type of integrity constraint in Structured Query Language?

1. NOT NULL constraint
2. PRIMARY KEY constraint
3. FOREIGN KEY constraint
4. All of the above

Options :

71087035705. 1
71087035706. 2
71087035707. 3
71087035708. 4

Question Number : 108 Question Id : 7108708928 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Two dice are thrown and the sum of the numbers on upper faces is obtained. The probability of this sum being 2 is

1. $\frac{1}{6}$
2. $\frac{1}{36}$
3. $\frac{1}{18}$
4. $\frac{1}{2}$

Options :

- 71087035709. 1
- 71087035710. 2
- 71087035711. 3
- 71087035712. 4

Question Number : 109 Question Id : 7108708929 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Genetic algorithms are inherently used for

- 1. Global optimization
- 2. Local optimization
- 3. Information retrieval
- 4. Classification

Options :

- 71087035713. 1
- 71087035714. 2
- 71087035715. 3
- 71087035716. 4

Question Number : 110 Question Id : 7108708930 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Ambiguity in inheritance can be resolved by defining a named instance within the derived class

Reason R

```
class P: public M, public N
```

```
{  
    public:  
        void display(void)  
        {  
            display();  
        }  
};
```

In the light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

71087035717. 1

71087035718. 2

71087035719. 3

71087035720. 4

Question Number : 111 Question Id : 7108708931 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

What does the code below in Perl script do?

```
$out = cal_diff($seq,$ref);
```

```
Sub cal_diff {
```

```
    my ($a, $b) = @_;
```

```
    my $diff = length($a) - length($b);
```

```
    return($diff);
```

```
}
```

1. It executes to provide the correct output
2. It displays syntactic errors on execution
3. It does not execute
4. It executes but provides incorrect output

Options :

71087035721. 1

71087035722. 2

71087035723. 3

71087035724. 4

Question Number : 112 Question Id : 7108708932 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Sequence databases	I. OMIM, OMIA
B. Structure databases	II. DDJB, UniProt
C. Metabolic databases	III. KEGG, ExPASy
D. Disease databases	IV. PDB, NDB

Choose the correct answer from the options given below:

1. A - IV, B - II, C - III, D - I
2. A - IV, B - II, C - I, D - III
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - III, D - I

Options :

71087035725. 1

71087035726. 2

71087035727. 3

71087035728. 4

Question Number : 113 Question Id : 7108708933 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following are Data Definition Language commands?

1. CREATE TABLE, INSERT
2. CREATE TABLE, ALTER TABLE
3. INSERT, UPDATE
4. DROP TABLE, SELECT

Options :

71087035729. 1

71087035730. 2

71087035731. 3

71087035732. 4

Question Number : 114 Question Id : 7108708934 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Two variables X, Y exhibit a positive correlation

Reason R: All the points on a scatter diagram lie on a straight line starting from the left bottom and going towards the left top

In the light of the above statements, choose the **correct** answer from the options given below

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

- 71087035733. 1
- 71087035734. 2
- 71087035735. 3
- 71087035736. 4

Question Number : 115 Question Id : 7108708935 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A population meets Hardy-Weinberg equilibrium when

- A. Mating is random
- B. The organism is diploid
- C. Population size is very large
- D. The mutation rate is high

Choose the correct answer from the options given below

- 1. A and B only
- 2. A, B and C only
- 3. A and D only
- 4. A, C and D only

Options :

- 71087035737. 1
- 71087035738. 2
- 71087035739. 3
- 71087035740. 4

Question Number : 116 Question Id : 7108708936 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following is NOT a description of the dynamic programming algorithm?

- 1. A method of sequence alignment
- 2. A method that can take gaps into account
- 3. A method that requires a manageable number of comparisons
- 4. This method does not provide an optimal (highest scoring) alignment

Options :

- 71087035741. 1

71087035742. 2

71087035743. 3

71087035744. 4

Question Number : 117 Question Id : 7108708937 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

De novo genome assembly algorithms require

1. Serial RAM
2. Parallel RAM
3. Both serial and parallel RAM
4. None of the above

Options :

71087035745. 1

71087035746. 2

71087035747. 3

71087035748. 4

Question Number : 118 Question Id : 7108708938 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

An Entity type in ER diagram is represented by

1. Arrow
2. Straight line
3. Oval shape
4. Rectangular box

Options :

71087035749. 1

71087035750. 2

71087035751. 3

71087035752. 4

Question Number : 119 Question Id : 7108708939 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The t-test is applied for testing of hypothesis when sample size is

1. Small
2. Large
3. Any sample size
4. None of the above

Options :

71087035753. 1

71087035754. 2

71087035755. 3

71087035756. 4

Question Number : 120 Question Id : 7108708940 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. C++	I. Object-Oriented language
B. C	II. Non-procedural language
C. SQL	III. Procedural language

Choose the correct answer from the options given below:

1. A - II, B - I, C - III
2. A - I, B - II, C - III
3. A - II, B - III, C - I
4. A - I, B - III, C - II

Options :

71087035757. 1

71087035758. 2

71087035759. 3

71087035760. 4