

National Testing Agency

Question Paper Name :	Animal Biotechnology 17th September Shift 2
Subject Name :	ANIMAL BIOTECHNOLOGY
Creation Date :	2021-09-17 18:54:36
Duration :	120
Total Marks :	480
Display Marks:	Yes

Animal Biotechnology

Group Number :	1
Group Id :	190889107
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 :	190889245
Section Number :	1
Section type :	Online

Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889285
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 19088912142 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

Options :

19088948461. 1
19088948462. 2
19088948463. 3
19088948464. 4

Question Number : 2 Question Id : 19088912143 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

Options :

- 19088948465. 1
- 19088948466. 2
- 19088948467. 3
- 19088948468. 4

Question Number : 3 Question Id : 19088912144 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Yellow vein mosaic is the viral disease of which of the following plants?

- 1. Ladyfinger
- 2. Papaya
- 3. Sugarcane
- 4. Banana

Options :

- 19088948469. 1
- 19088948470. 2
- 19088948471. 3
- 19088948472. 4

Question Number : 4 Question Id : 19088912145 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following organ(s) is affected by Mumps disease?

- 1. Entire body
- 2. Skin
- 3. Eye
- 4. Parotid

Options :

- 19088948473. 1
- 19088948474. 2

19088948476. 4

Question Number : 5 Question Id : 19088912146 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the chemical name of vitamin B₂?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

Options :

19088948477. 1

19088948478. 2

19088948479. 3

19088948480. 4

Question Number : 6 Question Id : 19088912147 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

Options :

19088948481. 1

19088948482. 2

19088948483. 3

19088948484. 4

Question Number : 7 Question Id : 19088912148 Question Type : MCQ Option Shuffling : No Is

Correct Marks : 4 Wrong Marks : 1

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

Options :

19088948485. 1

19088948486. 2

19088948487. 3

19088948488. 4

Question Number : 8 Question Id : 19088912149 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

Options :

19088948489. 1

19088948490. 2

19088948491. 3

19088948492. 4

Question Number : 9 Question Id : 19088912150 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

Options :

19088948493. 1

19088948494. 2

19088948495. 3

19088948496. 4

**Question Number : 10 Question Id : 19088912151 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of the following is considered as the “Magna Carta of England Education in India”?

1. Hunter education commission
2. Lord Macaulay’s Minute
3. Wood’s Despatch
4. Thomas Babington Macaulay

Options :

19088948497. 1

19088948498. 2

19088948499. 3

19088948500. 4

**Question Number : 11 Question Id : 19088912152 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

Options :

19088948501. 1

19088948502. 2

19088948503. 3

19088948504. 4

Question Number : 12 Question Id : 19088912153 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

Options :

19088948505. 1

19088948506. 2

19088948507. 3

19088948508. 4

Question Number : 13 Question Id : 19088912154 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

Options :

19088948509. 1

19088948510. 2

19088948511. 3

19088948512. 4

Question Number : 14 Question Id : 19088912155 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

Options :

19088948513. 1

19088948514. 2

19088948515. 3

19088948516. 4

Question Number : 15 Question Id : 19088912156 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

Options :

19088948517. 1

19088948518. 2

19088948519. 3

19088948520. 4

Question Number : 16 Question Id : 19088912157 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

Options :

19088948521. 1

19088948522. 2

19088948523. 3

19088948524. 4

Question Number : 17 Question Id : 19088912158 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

Options :

19088948525. 1

19088948526. 2

19088948527. 3

19088948528. 4

Question Number : 18 Question Id : 19088912159 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

Options :

19088948529. 1

19088948530. 2

19088948531. 3

19088948532. 4

Question Number : 19 Question Id : 19088912160 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

Options :

19088948533. 1

19088948534. 2

19088948535. 3

19088948536. 4

**Question Number : 20 Question Id : 19088912161 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Micro-irrigation fund of Rs. 5,000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

Options :

19088948537. 1

19088948538. 2

19088948539. 3

19088948540. 4

Part B Core : Veterinary and Animal Sciences-IV

Section Id : 190889246

Section Number : 2

Section type : Online



Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889286
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 19088912162 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If protein concentration in the interstitial space increases the GFR will

- | | |
|---------------|----------------------------------|
| (1) Decrease | (2) Increase |
| (3) No change | (4) First increase then decrease |

Options :

19088948541. 1

19088948542. 2

19088948543. 3

19088948544. 4

Question Number : 22 Question Id : 19088912163 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following cells secrete testosterone?

- | | |
|----------------------------------|-----------------------|
| (1) Leydig cells and theca cells | (2) Sertoli cells |
| (3) Granulosa cells | (4) Leydig cells only |

Options :

19088948545. 1

19088948546. 2

19088948547. 3

19088948548. 4

Question Number : 23 Question Id : 19088912164 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following anti coagulants is recommended for hematological examination

- | | |
|---------------------|-----------------------|
| (1) Sodium flouride | (2) Ammonium sulphate |
| (3) EDTA | (4) Sodium citrate |

Options :

19088948549. 1

19088948550. 2

19088948551. 3

19088948552. 4

Question Number : 24 Question Id : 19088912165 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Analogous structure to Z disc in smooth muscle fiber is

- | | |
|----------------|------------------|
| (1) Actin | (2) Myosin |
| (3) Calmodulin | (4) Dense bodies |

Options :

19088948553. 1

19088948554. 2

19088948555. 3

19088948556. 4

Question Number : 25 Question Id : 19088912166 Question Type : MCQ Option Shuffling : No

Correct Marks : 4 Wrong Marks : 1

In Myasthenia gravis there is

- (1) Less secretion of Acetyl choline
- (2) More activity of Acetyl choline esterase
- (3) Acetyl choline receptors at postsynaptic membrane increase in number
- (4) Acetyl choline receptors are inactivated due to antigen-antibody reaction

Options :

19088948557. 1

19088948558. 2

19088948559. 3

19088948560. 4

Question Number : 26 Question Id : 19088912167 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Aldosterone is mainly secreted when

- (1) There is increase in K^+ in the blood circulation
- (2) There is decrease in K^+ in the blood circulation
- (3) There is decrease in Na^+ in the blood circulation
- (4) There is increase in Na^+ in the blood circulation

Options :

19088948561. 1

19088948562. 2

19088948563. 3

19088948564. 4

Question Number : 27 Question Id : 19088912168 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following can not decrease methane emission

- (1) More concentrate diet
- (2) More unsaturated fatty acids in diet
- (3) Defaunation
- (4) More cellulose rich diet

Options :

19088948565. 1

19088948566. 2

19088948567. 3

19088948568. 4

**Question Number : 28 Question Id : 19088912169 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

The body fat in ruminants is mostly

- (1) Unsaturated
- (2) Saturated
- (3) Quality of fat depends on type of diet
- (4) Level of saturation depends upon type of organ

Options :

19088948569. 1

19088948570. 2

19088948571. 3

19088948572. 4

**Question Number : 29 Question Id : 19088912170 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of the following have receptors in cell membrane

- | | |
|------------------------------------|---------------------------------|
| (1) T ₃ /T ₄ | (2) Epinephrine/Nor epinephrine |
| (3) Vit D ₃ | (4) Aldosterone |

Options :

19088948573. 1

19088948574. 2

19088948575. 3

19088948576. 4

Question Number : 30 Question Id : 19088912171 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following pair is not correct regarding number of carbons in the steroid hormones?

- | | |
|----------------------|----------------------|
| (1) Corticoids-21C | (2) Progesterone-20C |
| (3) Testosterone-19C | (4) Estrogen-18C |

Options :

19088948577. 1

19088948578. 2

19088948579. 3

19088948580. 4

Question Number : 31 Question Id : 19088912172 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

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 : PMSG is necessary for maintenance of pregnancy in mare.

Reason R : PMSG has more of FSH like activity and less of LH like activity.

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 :

- 19088948581. 1
- 19088948582. 2
- 19088948583. 3
- 19088948584. 4

Question Number : 32 Question Id : 19088912173 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

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 : Progesterone sponges are used to lengthen the onset of heat in cattle.

Reason R : Progesterone reduces the secretion of estrogen.

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 :

- 19088948585. 1
- 19088948586. 2
- 19088948587. 3
- 19088948588. 4

Question Number : 33 Question Id : 19088912174 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : In ruminants fats can not be synthesized from glucose.

Statements II : Propionate is the gluconeogenic substance which is precursor in lactose synthesis

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

Options :

19088948589. 1

19088948590. 2

19088948591. 3

19088948592. 4

Question Number : 34 Question Id : 19088912175 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

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 : Evaporative heat loss mechanism is most efficient heat loss mechanisms in domestic animals.

Reason R : Water has a very high latent heat of vaporization

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 :

- 19088948593. 1
- 19088948594. 2
- 19088948595. 3
- 19088948596. 4

Question Number : 35 Question Id : 19088912176 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : Semi-circular canal helps in the equilibrium.

Statement II : Organ of corti is the main part of the ear where the sound waves cause depolarization.

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

Options :

- 19088948597. 1
- 19088948598. 2
- 19088948599. 3
- 19088948600. 4

Question Number : 36 Question Id : 19088912177 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For better utilization of dietary urea which of the following is required

- (1) Soluble sugar
- (2) Good quality protein in diet
- (3) Good quality fat in diet
- (4) Good quality green fodder

Options :



19088948601. 1

19088948602. 2

19088948603. 3

19088948604. 4

**Question Number : 37 Question Id : 19088912178 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Ketone bodies in urine are tested by

- | | |
|-------------------------------|------------------|
| (1) Sodium nitroprusside test | (2) Hay's test |
| (3) Benzedene test | (4) Sulphur test |

Options :

19088948605. 1

19088948606. 2

19088948607. 3

19088948608. 4

**Question Number : 38 Question Id : 19088912179 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

The normal ratio of bicarbonate buffer in plasma is

- | | |
|----------|----------|
| (1) 20:1 | (2) 1:20 |
| (3) 1:2 | (4) 2:1 |

Options :

19088948609. 1

19088948610. 2

19088948611. 3

19088948612. 4

Question Number : 39 Question Id : 19088912180 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

All types of carbohydrates can be identified by

- | | |
|-----------------------|--------------------|
| (1) Selivanoff's test | (2) Barfoed's test |
| (3) Benedict's test | (4) Molisch's test |

Options :

19088948613. 1

19088948614. 2

19088948615. 3

19088948616. 4

Question Number : 40 Question Id : 19088912181 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these amino acids contains two chiral carbons in their structure?

- | | |
|----------------|--------------|
| (1) Valine | (2) Leucine |
| (3) Isoleucine | (4) Cysteine |

Options :

19088948617. 1

19088948618. 2

19088948619. 3

19088948620. 4

Question Number : 41 Question Id : 19088912182 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these is /are examples of sphingolipids?

- (A) Cephalin
- (B) Sphingomyelin
- (C) Cardiolipin
- (D) GM2
- (E) Nervon

Choose the correct answer from the options given below :

- | | |
|---------------------------|--------------------------|
| (1) (A) and (B) only | (2) (B) and (C) only |
| (3) (A), (B) and (C) only | (4) (B),(D) and (E) only |

Options :

19088948621. 1

19088948622. 2

19088948623. 3

19088948624. 4

Question Number : 42 Question Id : 19088912183 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gamma glutamyl transferase is most specific indicator of

- | | |
|---------------------|-------------------------|
| (1) Bone cancer | (2) Cardiac infarction |
| (3) Prostate cancer | (4) Alcoholic cirrhosis |

Options :

19088948625. 1

19088948626. 2

19088948627. 3

19088948628. 4

Question Number : 43 Question Id : 19088912184 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Enzymes present in inactive form are called as

- (A) Pre enzyme
- (B) Pro enzyme
- (C) Prepro enzyme
- (D) Zymogen
- (E) Abzyme

Choose the correct answer from the options given below :

- | | |
|----------------------|----------------------|
| (1) (A) and (D) only | (2) (B) and (D) only |
| (3) (C) and (D) only | (4) (D and (E) only |

Options :

19088948629. 1

19088948630. 2

19088948631. 3

19088948632. 4

Question Number : 44 Question Id : 19088912185 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these is/are examples of Ketone body?

- (A) Acetic acid
- (B) Aceto acetic acid
- (C) Beta hydroxybutyric acid
- (D) Acetone
- (E) Butyric acid

Choose the most appropriate answer from the options given below :

- | | |
|---------------------------|---------------------------|
| (1) (A), (B) and (C) only | (2) (B), (C) and (D) only |
| (3) (B), (D) and (E) only | (4) (A),(C) and (E) only |

Options :

- 19088948633. 1
- 19088948634. 2
- 19088948635. 3
- 19088948636. 4

Question Number : 45 Question Id : 19088912186 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I

- (A) DNA polymerase- α (alpha)
- (B) DNA polymerase- β (beta)
- (C) DNA polymerase- γ (gama)
- (D) DNA polymerase- Δ (Delta)

List II

- (I) Replication leading strand
- (II) Replication lagging strand
- (III) Replication mitochondrial DNA
- (IV) DNA repair

Choose the most appropriate answer from the options given below:

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

Options :

- 19088948637. 1
- 19088948638. 2
- 19088948639. 3
- 19088948640. 4

Question Number : 46 Question Id : 19088912187 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Deficiency of Vitamin E may cause :

- | | |
|--------------------------|---------------------------------|
| (A) White muscle disease | (B) Fibro cystic breast disease |
| (C) Pellagra | (D) Xerophthalmia |

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (A) and (B) only
- (3) (C) only
- (4) (C) and (D) only

Options :

19088948641. 1

19088948642. 2

19088948643. 3

19088948644. 4

Question Number : 47 Question Id : 19088912188 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088948645. 1
- 19088948646. 2
- 19088948647. 3
- 19088948648. 4

Question Number : 48 Question Id : 19088912189 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Purity of DNA in a sample can be determined by measuring absorbance at :

- | | |
|------------|------------------------|
| (A) 220 A° | (B) 260 A° |
| (C) 280 A° | (D) 260 : 280 A° ratio |

Choose the most appropriate answer from the options given below :

- (1) (B) and (D) only
- (2) (C) and (D) only
- (3) (D) only
- (4) (A) only

Options :

- 19088948649. 1
- 19088948650. 2
- 19088948651. 3
- 19088948652. 4

Question Number : 49 Question Id : 19088912190 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these can be used as a matrix for gel filtration chromatography?

- | | |
|-------------------------|--------------------------------|
| (A) Carboxy methyl (CM) | (B) Diethyl Amino Ethyl (DEAE) |
| (C) Dextran | (D) Agarose |
| (E) Silica | |

Choose the **most appropriate** answer from the options given below :

- (1) (A) and (B) only
- (2) (A) and (E) only
- (3) (C) and (D) only
- (4) (B) and (E) only

Options :

19088948653. 1

19088948654. 2

19088948655. 3

19088948656. 4

Question Number : 50 Question Id : 19088912191 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these is/are hyper calcemic hormone?

- | | |
|------------------|-------------------------|
| (A) Calcitonin | (B) Parathyroid hormone |
| (C) Calcitriol | (D) Glucocorticoid |
| (E) Testosterone | |

Choose the correct answer from the options given below :

- (1) (A) and (C) only
- (2) (A) and (B) only
- (3) (B) and (C) only
- (4) (A) and (D) only

Options :

19088948657. 1

19088948658. 2

19088948659. 3

19088948660. 4

Question Number : 51 Question Id : 19088912192 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

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 : Level of direct bilirubin increases in obstructive jaundice

Reason R : Obstructive jaundice causes increased rate of conjugation in liver

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 :

19088948661. 1

19088948662. 2

19088948663. 3

19088948664. 4

Question Number : 52 Question Id : 19088912193 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statement :

Statement I : One mRNA can be translated into one or more proteins.

Statement II : Alternate splicing/RNA editing of mRNA may translate/form two or more proteins.

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

- (1) Both statement I and statement II are true
- (2) Both statement I and statement II are false
- (3) Statement I is correct but statement II is false
- (4) Statement I is incorrect but statement II is true

Options :

19088948666. 2

19088948667. 3

19088948668. 4

Question Number : 53 Question Id : 19088912194 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of these termination codons is also known as 'Ochre'?

(1) UAA

(2) UAG

(3) UGA

(4) AUG

Options :

19088948669. 1

19088948670. 2

19088948671. 3

19088948672. 4

Question Number : 54 Question Id : 19088912195 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

RFLP stands for

(1) Recognition fragment length polymorphism

(2) Restriction fragment length polymorphism

(3) Restriction fragment locus polymorphism

(4) Restriction fragment length polymerase

Options :

19088948673. 1

19088948674. 2

19088948675. 3

19088948676. 4

Question Number : 55 Question Id : 19088912196 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In prokaryotes, TATAAT sequence is present at _____ bases upstream of initiation site of transcription

- | | |
|------------|-------------|
| (1) -35 bp | (2) -10 bp |
| (3) -25 bp | (4) -105 bp |

Options :

19088948677. 1

19088948678. 2

19088948679. 3

19088948680. 4

Question Number : 56 Question Id : 19088912197 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : Trans Golgi Network is the last sorting station of proteins that directs protein to various destinations.

Statement II : Protein synthesis and post-translation modification occurs in rough endoplasmic reticulum.

In the 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 :

19088948681. 1

19088948682. 2

19088948683. 3

19088948684. 4

**Question Number : 57 Question Id : 19088912198 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

In Electron Transport Chain (ETC), which metal ion acts as membrane bound electron carriers

(A) Mg

(B) Ca

(C) Na

(D) Cu

Choose the most appropriate answer from the options given below :

(1) (A) and (D) only

(2) (A) and (B) only

(3) (B) and (C) only

(4) (D) only

Options :

19088948685. 1

19088948686. 2

19088948687. 3

19088948688. 4

**Question Number : 58 Question Id : 19088912199 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : A cell contains one apical, two lateral and one basal plasma membrane

Statement II : Apical plasma membrane contains proteins and responsible for intra cellular interactions in association with extracellular matrix.

In the 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 :

19088948689. 1

19088948690. 2

19088948691. 3

19088948692. 4

**Question Number : 59 Question Id : 19088912200 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : Codons are degenerate in nature.

Statement II : The frequency of codons, codon usage biasness, controls the translation of protein, which varies among species.

In the 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 :

19088948693. 1

19088948694. 2

19088948695. 3

19088948696. 4

Question Number : 60 Question Id : 19088912201 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II :

List I	List II
(a) mRNA	(i) Non-coding RNA
(b) rRNA	(ii) Gene expression study
(c) tRNA	(iii) 5S
(d) miRNA	(iv) Gene silencing

Choose the correct answer from the options given below:

- (1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
- (2) (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)
- (3) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
- (4) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

Options :

19088948697. 1

19088948698. 2

19088948699. 3

19088948700. 4

Question Number : 61 Question Id : 19088912202 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : Transcription of all 3-types of RNA is done by RNA polymerase II

Statement II : RNA polymerase II is the only nuclear RNA polymerase of eukaryotic cell

In the 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 :

19088948701. 1

19088948702. 2

19088948703. 3

19088948704. 4

Question Number : 62 Question Id : 19088912203 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gene silencing can be done by

(1) Sno RNA

(2) Si RNA

(3) hn RNA

(4) tRNA

Options :

19088948705. 1

19088948706. 2

19088948707. 3

19088948708. 4

Question Number : 63 Question Id : 19088912204 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

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 : Many of the extracellular protein binds to integrins and involves in adhesion or transmission of cell signalling

Reasons R : Integrins contain tripeptide amino acid sequences of arginine-glycine-aspartic acid (RGD)

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 :

19088948709. 1

19088948710. 2

19088948711. 3

19088948712. 4

Question Number : 64 Question Id : 19088912205 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gap junctions have a simple molecular composition and they are entirely composed of integral membrane protein called

- | | |
|--------------|----------------------|
| (1) Cadherin | (2) β -catenin |
| (3) Annexin | (4) Connexin |

Options :

19088948713. 1

19088948714. 2

19088948715. 3

19088948716. 4

Question Number : 65 Question Id : 19088912206 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

p53 is a/an,

- | | |
|---------------------------|-----------------------|
| (1) Proto oncogene | (2) Oncogene |
| (3) Tumor suppressor gene | (4) Pluripotency gene |

Options :

19088948717. 1

19088948718. 2

19088948719. 3

19088948720. 4

Question Number : 66 Question Id : 19088912207 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

DNA quantity in the sample is determined by

- (A) Absorbance at A 260 using nanodrop
- (B) Dye based technique using orbit
- (C) PCR
- (D) Bradford assay

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (A) and (B) only
- (3) (B) and (C) only
- (4) (D) only

Options :

19088948721. 1

19088948722. 2

19088948723. 3

Question Number : 67 Question Id : 19088912208 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

RT-PCR differs from PCR in terms of

- | | |
|-----------------------------|--|
| (1) Template cDNA | (2) Efficiency of amplification |
| (3) Speed of polymerization | (4) Sensitivity-RT PCR is more sensitive |

Options :

19088948725. 1

19088948726. 2

19088948727. 3

19088948728. 4

Question Number : 68 Question Id : 19088912209 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

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 : Cell fusion is a technique where two different cell types or cells from two different species can be fused to produce one cell

Reason R : Cells can be fused by addition of certain inactivated viruses that attach to the surface membrane

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 :

19088948730. 2

19088948731. 3

19088948732. 4

Question Number : 69 Question Id : 19088912210 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A type II topo-isomerase that relieves the mechanical strain of DNA which builds up during replication is

- | | |
|------------------|----------------|
| (1) DNA gyrase | (2) Primase |
| (3) DNA helicase | (4) DNA ligase |

Options :

19088948733. 1

19088948734. 2

19088948735. 3

19088948736. 4

Question Number : 70 Question Id : 19088912211 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Pluripotency genes are present in which type(s) of cells

- (A) Embryonic stem cells
- (B) Cancer stem cells
- (C) Progenitor cells
- (D) Mammary epithelial cells

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (A) and (B) only
- (3) (A) and (C) only
- (4) (C) and (D) only

Options :

19088948737. 1
19088948738. 2
19088948739. 3
19088948740. 4

Part C : Animal Biotechnology

Section Id :	190889247
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889287
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 19088912212 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A multiprotein complex that function as a physical bridge in holding two sister chromatids together through G₂ phase of the mitotic cell cycle is

- (1) Adhesin

(2) Cohesin

(3) Condesin

(4) Chromatin

Options :

19088948741. 1



19088948742. 2

19088948743. 3

19088948744. 4

Question Number : 72 Question Id : 19088912213 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Longest phase of the mitotic cell cycle is

- | | |
|-----------------|-----------------|
| (1) Inter phase | (2) G_1 phase |
| (3) G_2 phase | (4) S-phase |

Options :

19088948745. 1

19088948746. 2

19088948747. 3

19088948748. 4

Question Number : 73 Question Id : 19088912214 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Meiotic non-disjunction occurs due to

- (1) Failure of chromosomal separation during meiosis I
- (2) Failure of chromatid separation during meiosis II
- (3) Both the above
- (4) Failure of cytokinesis

Options :

19088948749. 1

19088948750. 2

19088948751. 3

19088948752. 4

Question Number : 74 Question Id : 19088912215 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Reverse transcriptase is an

- | | |
|----------------------------------|----------------------------------|
| (1) DNA dependant RNA polymerase | (2) RNA dependant DNA polymerase |
| (3) RNA dependant RNA polymerase | (4) DNA dependant DNA polymerase |

Options :

19088948753. 1

19088948754. 2

19088948755. 3

19088948756. 4

Question Number : 75 Question Id : 19088912216 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not a tool for gene cloning?

- | | |
|-------------------------------|----------------|
| (1) Restriction endonucleases | (2) DNA ligase |
| (3) Reverse transcriptase | (4) ATPase |

Options :

19088948757. 1

19088948758. 2

19088948759. 3

19088948760. 4

Question Number : 76 Question Id : 19088912217 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a correct statement about a plasmid?

- (1) It is a DNA molecule other than bacterial chromosome and capable of self replication and transmission
- (2) It is a linear DNA molecule and present in association of bacterial chromosome always
- (3) Extra chromosomal DNA molecule of bacteria but not capable of self -replication and transmission
- (4) Plasmids are also called episomes

Options :

19088948761. 1

19088948762. 2

19088948763. 3

19088948764. 4

Question Number : 77 Question Id : 19088912218 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In gene cloning, competence of E-Coli is increased by the treatment of

- (1) 50 mM CaCl_2 for 12–24 hr
- (2) 5 mM CaCl_2 for 2–4 hr
- (3) 100 mM NaCl for 12 hr
- (4) 50 mM NaCl for 2 hr

Options :

19088948765. 1

19088948766. 2

19088948767. 3

19088948768. 4

Question Number : 78 Question Id : 19088912219 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In gene cloning, elimination of non-transformed cells are done by

- (1) Selectable markers only
- (2) Scorable markers only
- (3) Both selectable and scorable markers can be used
- (4) All cells are transformed cells while gene cloning and therefore elimination of non-transformed cells are an optional step

Options :

19088948769. 1

19088948770. 2

19088948771. 3

19088948772. 4

Question Number : 79 Question Id : 19088912220 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A type of PCR in which a portion of sequence is amplified using a pair of primers followed by the reamplification using another pair of primers complementary to the regions immediately beyond the 3'-end of the 1st pair of primers

- (1) ARM PCR
- (2) Hot start PCR
- (3) Nested PCR
- (4) LAMP PCR

Options :

19088948773. 1

19088948774. 2

19088948775. 3

19088948776. 4

Question Number : 80 Question Id : 19088912221 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Green Fluorescent Protein (GFP) is an example of

- | | |
|---------------------------------------|------------------------------------|
| (1) a scorable marker | (2) a selectable marker |
| (3) an antibiotic resistance reporter | (4) a substrate utilization marker |

Options :

19088948777. 1

19088948778. 2

19088948779. 3

19088948780. 4

Question Number : 81 Question Id : 19088912222 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Isolation of RNA is more challenging than the isolation of DNA due to

- | | |
|---|----------------------|
| (A) Vulnerability of digestion by RNases present endogenously in the tissue | |
| (B) RNA is short lived and present in limited quantity | |
| (C) RNA forms complex with proteins | |
| (D) RNA isolation kits are expensive and hence challenging | |
| (1) Only (A) | (2) Only (B) |
| (3) Both (A) and (B) | (4) Both (C) and (D) |

Options :

19088948781. 1

19088948782. 2

19088948783. 3

19088948784. 4

Question Number : 82 Question Id : 19088912223 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I: PCR is useful to amplify variety of templates of DNA

Statement II: The enormous sensitivity of PCR to amplify one or two molecules to millions of copies of DNA also possesses a drawback of contamination

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true but Statement II is false
- (4) Statement I is false but Statement II is true

Options :

19088948785. 1

19088948786. 2

19088948787. 3

19088948788. 4

Question Number : 83 Question Id : 19088912224 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I: Ligation of blunt-end DNA fragment is not efficient as ligation of sticky ends.

Statement II: Addition of double stranded small cDNA molecule called "linkers" are added to make sticky-end ligated cDNA

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true but Statement II is false
- (4) Statement I is false but Statement II is true

Options :

19088948789. 1

19088948790. 2

19088948791. 3

19088948792. 4

Question Number : 84 Question Id : 19088912225 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Determination of protein concentration requires purification of protein > 90% to its purity

Statement II: The bicinchoninic acid (BCA) method is a method of determining protein concentration in lysates. Which is based in the conversion of cu^{+2} to cu^{+} under under alkaline conditions.

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true but Statement II is false
- (4) Statement I is false but Statement II is true

Options :

19088948793. 1

19088948794. 2

19088948795. 3

19088948796. 4

Question Number : 85 Question Id : 19088912226 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : A substance which is recognized by an antibody is called antigen.

Statement II : A site on antigen that is recognized by an antibody is called epitope.

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true but Statement II is false
- (4) Statement I is false but Statement II is true

Options :

19088948797. 1

19088948798. 2

19088948799. 3

19088948800. 4

Question Number : 86 Question Id : 19088912227 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the steps of gene cloning from initial steps to final step

- (A) Grow cells and select recombinant clones
- (B) Transform bacteria
- (C) Cut target gene and plasmid
- (D) Ligate to make a recombinant plasmid
- (E) Select clone containing desired genes for amplification

Choose the correct answer from the options given below :

- (1) (A) → (B) → (C) → (D) → (E)
- (2) (B) → (A) → (E) → (C) → (D)
- (3) (C) → (D) → (B) → (A) → (E)
- (4) (C) → (D) → (A) → (B) → (E)

Options :

19088948801. 1

19088948802. 2

19088948803. 3

19088948804. 4

Question Number : 87 Question Id : 19088912228 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Following are the steps of initiation of bacterial transcription. Steps are not arranged in sequential manners. Please arrange them as they occur.

- (A) Interaction of sigma (σ) factor with enzyme to make holoenzyme
- (B) Binding of core enzyme (RNAPol) with DNA
- (C) Complete (holoenzyme binds to promoter region of DNA)
- (D) Dissociation of σ factor
- (E) Elongation of transcripts

Choose the correct answer from the options given below:

- (1) (A) $\rightarrow$ (C) $\rightarrow$ (E) $\rightarrow$ (B) $\rightarrow$ (D)
- (2) (A) $\rightarrow$ (C) $\rightarrow$ (B) $\rightarrow$ (D) $\rightarrow$ (E)
- (3) (B) $\rightarrow$ (A) $\rightarrow$ (D) $\rightarrow$ (E) $\rightarrow$ (C)
- (4) (B) $\rightarrow$ (A) $\rightarrow$ (C) $\rightarrow$ (D) $\rightarrow$ (E)

Options :

19088948805. 1

19088948806. 2

19088948807. 3

19088948808. 4

Question Number : 88 Question Id : 19088912229 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Stages of mitosis in animal cells are:

- (A) Interphase
- (B) Prophase
- (C) Anaphase
- (D) Metaphase
- (E) Telophase

Choose the correct answer from the options given below:

- (1) (A), (B), (D), (C), (E)
- (2) (A), (B), (C), (D), (E)
- (3) (B), (A), (C), (D), (E)
- (4) (B), (D), (A), (C), (E)

Options :

19088948809. 1

19088948810. 2

19088948811. 3

19088948812. 4

**Question Number : 89 Question Id : 19088912230 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

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: Cancer cells have uncontrolled proliferation, grow beyond the Hayfick's limit

Reason R: In cancer cells all the mitototic check points are lost and then cells grow infinitely

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 :

19088948813. 1

19088948814. 2

19088948815. 3

19088948816. 4

**Question Number : 90 Question Id : 19088912231 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

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 : Apoptosis is the programmed cell death that leads DNA damage

Reason R : DNA damages are repaired by mismatch repair (MMR), nucleotide excision repair and base excision repair

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 :

19088948817. 1

19088948818. 2

19088948819. 3

19088948820. 4

Question Number : 91 Question Id : 19088912232 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Basic elements of cell signaling system consists of

- (1) Extra cellular signaling molecules and second messengers only
- (2) Trans membrane receptor and cytoplasmic proteins only
- (3) Extra cellular signaling molecule, transmembrane receptor and second messenger
- (4) Extra cellular signaling molecules and intra - nuclear effectors only

Options :

19088948821. 1

19088948822. 2

19088948823. 3

19088948824. 4

Question Number : 92 Question Id : 19088912233 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Example (s) of extra cellular signaling molecules responsible for signal transduction can be

(A) Amino acids and their derivatives

(B) Gases like NO, CO

(C) Steroids

(D) Polypeptide

(1) Only (A) and (C)

(2) Only (B) and (C)

(3) Only (D)

(4) Only (A), (B) and (C)

Options :

19088948825. 1

19088948826. 2

19088948827. 3

19088948828. 4

Question Number : 93 Question Id : 19088912234 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: In signal transduction one type of a receptor transmits the signal from cytoplasmic domain to nearby enzyme that generates a "Second messenger"

Statement II: The nearby enzyme that generates the "Second messenger" is referred as an "effector"

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

Options :

19088948829. 1

19088948830. 2

19088948831. 3

19088948832. 4

Question Number : 94 Question Id : 19088912235 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

G-Protein Coupled Receptors (GPCRs) are a huge family of transmembrane receptor containing

- | | |
|----------------------------------|----------------------------------|
| (1) 5 transmembrane (TM) helices | (2) 3 transmembrane (TM) helices |
| (3) 7 transmembrane (TM) helices | (4) 2 transmembrane (TM) helices |

Options :

19088948833. 1

19088948834. 2

19088948835. 3

19088948836. 4

Question Number : 95 Question Id : 19088912236 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I

- (A) Epinephrine
- (B) Serotonin
- (C) Light
- (D) Acetylcholine

List II

- (I) Muscarinic receptor
- (II) Serotonin receptor
- (III) Rhodopsin
- (IV) β -adrenergic receptor

Choose the correct answer from the options given below :

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

Options :

19088948837. 1

19088948838. 2

19088948839. 3

19088948840. 4

Question Number : 96 Question Id : 19088912237 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

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) : A G-protein is said to be "ON" when its α -subunit ($G\alpha$) is bound to GTP

Reasons (R) : The guanine - nucleotide binding site is present on the $G\alpha$ subunit

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 :

19088948841. 1

19088948842. 2

19088948843. 3

19088948844. 4

Question Number : 97 Question Id : 19088912238 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The term apoptosis was coined by John Kerr and his team in 1972 in the study of

- | | |
|---------------|-----------------------|
| (1) Fruit fly | (2) <i>C. elegans</i> |
| (3) Mouse | (4) Rat |

Options :

19088948845. 1

19088948846. 2

19088948847. 3

19088948848. 4

Question Number : 98 Question Id : 19088912239 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

External and internal stimuli activates apoptosis by signalling pathway

- (A) Extrinsic pathway is a receptor-mediated pathway
- (B) Intrinsic pathway is a mitochondrial-mediated pathway
- (C) Extrinsic pathway is a mitochondrial-mediated pathway
- (D) Intrinsic pathway is a receptor-mediated pathway
- (E) Extrinsic pathway activates Caspase 9

Choose the correct answer from the options given below:

- (1) (A) and (B) only
- (2) (C) and (D) only
- (3) (C), (D) and (E) only
- (4) (C) and (E) only

Options :

19088948849. 1

19088948850. 2

19088948851. 3

19088948852. 4

**Question Number : 99 Question Id : 19088912240 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Utilization of glucose is controlled by a signaling pathway that begins with an activated

- | | |
|-------------------|------------------------------------|
| (1) Phospholipase | (2) Receptor tyrosine kinase (RTK) |
| (3) DAG | (4) GPCR |

Options :

19088948853. 1

19088948854. 2

19088948855. 3

19088948856. 4

Question Number : 100 Question Id : 19088912241 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Which of these is not the characteristics of a cancer cell?

- (1) Loss of growth control
- (2) Continue to grow in absence of stimulatory signals
- (3) Senescence
- (4) Aneuploidy

Options :

- 19088948857. 1
- 19088948858. 2
- 19088948859. 3
- 19088948860. 4

Question Number : 101 Question Id : 19088912242 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Which one of the following virus is responsible for causing cervical cancer?

- (1) Human papilloma virus
- (2) HIV
- (3) Hepatitis B virus
- (4) Herpes virus

Options :

- 19088948861. 1
- 19088948862. 2
- 19088948863. 3
- 19088948864. 4

Question Number : 102 Question Id : 19088912243 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

CD 8 is a marker of

- | | |
|-----------------------------|-------------------------|
| (1) Cytotoxic T lymphocyte | (2) Helper T lymphocyte |
| (3) Regulatory T lymphocyte | (4) B-cells |

Options :

19088948865. 1

19088948866. 2

19088948867. 3

19088948868. 4

Question Number : 103 Question Id : 19088912244 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

CD4 is marker of

- | | |
|-----------------------------|-------------------------|
| (1) Cytotoxic T-lymphocyte | (2) Helper T-lymphocyte |
| (3) Regulatory T-Lymphocyte | (4) B-cell |

Options :

19088948869. 1

19088948870. 2

19088948871. 3

19088948872. 4

Question Number : 104 Question Id : 19088912245 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Types of cancer can be distinguished by the techniques

- (A) Immuno histochemistry
- (B) Gene expression profiling
- (C) PCR
- (D) RAPD
- (E) RFLP

Choose the correct answer from the options given below:

- (1) (A) only
- (2) (A) and (B) only
- (3) (A), (B) and (C) only
- (4) (C), (D) and (E) only

Options :

19088948873. 1

19088948874. 2

19088948875. 3

19088948876. 4

Question Number : 105 Question Id : 19088912246 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
(A) Tumor suppressor gene	(I) SRPC
(B) Proto oncogenes	(II) Caspases
(C) Apoptosis	(III) P53
(D) Oncogenes	(IV) MYC

Choose the correct answer from the options given below :

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

Options :

19088948877. 1

19088948878. 2

19088948879. 3

19088948880. 4

Question Number : 106 Question Id : 19088912247 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

BCl_2

- (1) Inhibit apoptosis
- (2) Promotes apoptosis
- (3) Has no role in apoptosis
- (4) BCl_2 is a cell proliferation marker

Options :

19088948881. 1

19088948882. 2

19088948883. 3

19088948884. 4

Question Number : 107 Question Id : 19088912248 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : Like B-cells, T-cells are also subject to clonal selection

Statement II : Unlike B-cells that are activated by antigens, T-cells are activated by another cells called Antigen Presenting Cells (APCs)

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

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

Options :

19088948885. 1

19088948886. 2

19088948887. 3

19088948888. 4

Question Number : 108 Question Id : 19088912249 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

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) : Dendritic cells (DCs) are the antigen presenting cells and often described as "sentinels" of the immune system

Reasons (R) : DCs stand guard in the body's peripheral tissue

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 :

19088948889. 1

19088948890. 2

19088948891. 3

19088948892. 4

Question Number : 109 Question Id : 19088912250 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which is not a sub set of T-cell?

- | | |
|------------------------------|---------------------------------|
| (1) Cytotoxic T-lymphocyte | (2) Helper T- lymphocyte |
| (3) Regulatory T- lymphocyte | (4) Proliferative T- lymphocyte |

Options :

19088948893. 1

19088948894. 2

19088948895. 3

19088948896. 4

Question Number : 110 Question Id : 19088912251 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

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) : Once a cell is committed to form a specific antibody, it can switch the class of immunoglobulin (Ig) it produces

Reasons (R) : Changing the heavy chain of Ig produced in the cell is responsible for production of IgM to IgG

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 :

19088948897. 1

19088948898. 2

19088948899. 3

19088948900. 4

Question Number : 111 Question Id : 19088912252 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

These statements are about the Major Histo-compatibility complex (MHC) molecules

- (A) MHC is the region of genome that governs tissue graft rejection
- (B) There are more than 20 different genes that consists MHC
- (C) MHC genes are highly polymorphic
- (D) HLA-DRB is an example of MHC class I molecule
- (E) T-cells utilize MHC molecules expressed on antigen presenting cells for interaction

Choose the correct answer from the options given below:

- (1) (A), (B), (C) and (D) only
- (2) (A), (B), (C) and (E) only
- (3) (B), (C), (D) and (E) only
- (4) (A), (B), (D) and (E) only

Options :

19088948901. 1

19088948902. 2

19088948903. 3

19088948904. 4

Question Number : 112 Question Id : 19088912253 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088948905. 1
- 19088948906. 2
- 19088948907. 3
- 19088948908. 4

Question Number : 113 Question Id : 19088912254 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

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) : 2-4 celled stage of in-vitro produced embryo is best for embryo transfer.

Reasons (R) : Prolonged culture do not reduce survival rate of embryo.

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 :

- 19088948909. 1
- 19088948910. 2
- 19088948911. 3
- 19088948912. 4

Question Number : 114 Question Id : 19088912255 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For super ovulation in donar female are treated with one of the following hormones

- | | |
|--------------------|--------------------|
| (1) Gonadotrophins | (2) Estrogen |
| (3) Progesterone | (4) Growth hormone |

Options :

19088948913. 1

19088948914. 2

19088948915. 3

19088948916. 4

**Question Number : 115 Question Id : 19088912256 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is not correct about embryo splitting?

- (1) Young embryo is split into 2-4 parts
- (2) Of these, only one part of embryo is used in embryo transfer
- (3) Embryo splitting is often combined with multiple ovulation and embryo transfer
- (4) Rate of multiplication is enhanced by embryo splitting

Options :

19088948917. 1

19088948918. 2

19088948919. 3

19088948920. 4

**Question Number : 116 Question Id : 19088912257 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

During *in-vitro* fertilization oocytes are examined and evaluated.

- (A) Number of pronuclei and polar bodies
- (B) Granulation of oocytes
- (C) Shape of oocytes
- (D) Presence of granulation and distorted shape indicates abnormalities in zygote and discarded
- (E) Presence of granulation and distorted shape indicates fertilized embryo and selected

Choose the correct answer from the options given below:

- (1) (A) only
- (2) (A), (B), (C) and (D) only
- (3) (A), (B), (C) and (E) only
- (4) (D) only

Options :

19088948921. 1

19088948922. 2

19088948923. 3

19088948924. 4

Question Number : 117 Question Id : 19088912258 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The embryo transfer technology has certain limitations except :

- (1) High degree of expertise is required for successful operation
- (2) High cost of production of *in-vitro* embryo
- (3) Donor females are removed from the production during the operation
- (4) Incompatibility of embryo from donor to recipient surrogate mother

Options :

19088948925. 1

19088948926. 2

19088948927. 3

19088948928. 4

Question Number : 118 Question Id : 19088912259 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Transgenic animals can be identified by these molecular tools except

- (1) PCR amplification of integrated DNA (2) Detection of mRNA expression
(3) Southern hybridization (4) Multiparameter cell sorting

Options :

19088948929. 1

19088948930. 2

19088948931. 3

19088948932. 4

Question Number : 119 Question Id : 19088912260 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Primary culture means

- (1) culturing of established cell lines for the first time in the lab
(2) Harvesting cells from the freshly excised tissue and culturing
(3) Large scale production of cells for pharmaceutical protein production
(4) Starting of culture of any cell type including cell lines for the first time in the newly established lab is reformed as primary culture

Options :

19088948933. 1

19088948934. 2

19088948935. 3

19088948936. 4

Question Number : 120 Question Id : 19088912261 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Objectives of transgenic animal production

- (A) Increase milk, meat and wool production
- (B) Molecular and gene farming
- (C) Functional food production
- (D) Enhance resistance to infection
- (E) Replace native and desi animal population from transgenic animals

Choose the correct answer from the options given below:

- | | |
|--------------------------------|----------------------|
| (1) (A) only | (2) (A) and (B) only |
| (3) (A), (B), (C) and (D) only | (4) (D) and (E) only |

Options :

19088948937. 1

19088948938. 2

19088948939. 3

19088948940. 4