National Testing Agency

Question Paper Name :	Principles of Genetics 29th August 2021 Shift 2
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Principles of Genetics

Group Number :	1
Group Id :	940918123
Group Maximum Duration :	0
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Show Attended Group? :	No
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Break time :	0
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Is this Group for Examiner? :	No

Principles of Genetics-1

Section Id :	940918179
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	940918244
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 9409188091 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The law of independent assortment was proposed based on _____ cross.

1. Monohybrid
2. Dihybrid
3. Back cross
4. Test cross

Options :

94091830337. 1

94091830338. 2

94091830339. 3

94091830340. 4

Question Number : 2 Question Id : 9409188092 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

As the distance between the linked genes decreases it shows_____.

1. Strong linkage
2. Weak linkage
3. Better chance of separation
4. Independent assortment

Options :

94091830341. 1

94091830342. 2

94091830343. 3

94091830344. 4

Question Number : 3 Question Id : 9409188093 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Match **List I** with **List II**

List I	**List II**
A. Morgan	I. Law of dominance
B. Linnaeus	II. Sex linkage
C. Mendel	III. Chromosomal theory of inheritance
D. Sutton	IV. Classification

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

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

Options :

94091830345. 1

94091830346. 2

94091830347. 3

94091830348. 4

Question Number : 4 Question Id : 9409188094 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following provides the first clue about the genes?

1. Preformation theory
2. Epigenesis theory
3. Germplasm theory
4. Theory of acquired characters

Options :

94091830349. 1

94091830350. 2

94091830351. 3

94091830352. 4

Question Number : 5 Question Id : 9409188095 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Maternal infection with _____ protozoan can cause Asian influenza.

1. Entamoeba
2. Leishmania
3. Trypanosoma
4. Toxoplasma

Options :

94091830353. 1

94091830354. 2

94091830355. 3

94091830356. 4

Question Number : 6 Question Id : 9409188096 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Who discovered the human blood groups?

1. Landsteiner
2. Mullis
3. Johannsen
4. Sanger

Options :

94091830357. 1

94091830358. 2

94091830359. 3

94091830360. 4

Question Number : 7 Question Id : 9409188097 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is the main source of genetic variation?

1. Speciation
2. Genetic drift
3. Mutation
4. Natural selection

Options :

94091830361. 1

94091830362. 2

94091830363. 3

94091830364. 4

Question Number : 8 Question Id : 9409188098 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Mendel used _____ plants for his experiments.

1. *Zea mays*
2. *Oryza sativa*
3. *Sorghum*
4. *Pisum sativum*

Options :

94091830365. 1

94091830366. 2

94091830367. 3

94091830368. 4

Question Number : 9 Question Id : 9409188099 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Based on the monohybrid cross, which of the following laws was deduced by the Mendel?

1. Incomplete dominance
2. Inheritance of acquired characters
3. Segregation
4. Independent assortment

Options :

94091830369. 1

94091830370. 2

94091830371. 3

94091830372. 4

Question Number : 10 Question Id : 9409188100 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is used as a tool to analyze the cross?

1. Dihybrid cross
2. Monohybrid cross
3. Hybrid cross
4. Test cross

Options :

94091830373. 1

94091830374. 2

94091830375. 3

94091830376. 4

Question Number : 11 Question Id : 9409188101 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Separation of homologous chromosomes occurs during _____.

1. Anaphase II
2. Anaphase I
3. Metaphase I
4. Metaphase II

Options :

94091830377. 1

94091830378. 2

94091830379. 3

94091830380. 4

Question Number : 12 Question Id : 9409188102 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

_____ is the intermediate trait of incomplete dominance.

1. Heterozygous genotype
2. Homozygous genotype
3. Hemizygous genotype
4. Homogamous genotype

Options :

94091830381. 1

94091830382. 2

94091830383. 3

94091830384. 4

Question Number : 13 Question Id : 9409188103 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Mendel started his experiments with_____ kinds of peas.

1. 24
2. 34
3. 44
4. 54

Options :

94091830385. 1

94091830386. 2

94091830387. 3

94091830388. 4

Question Number : 14 Question Id : 9409188104 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which chromosome induces X chromosome inactivation?

1. The X chromosome carrying the Xic
2. The X chromosome which is not carrying the Xic
3. The autosome
4. The Y chromosome

Options :

94091830389. 1

94091830390. 2

94091830391. 3

94091830392. 4

Question Number : 15 Question Id : 9409188105 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Alternative versions of genes are called as _____.

1. Alleles
2. Factors
3. Characters
4. Units

Options :

94091830393. 1

94091830394. 2

94091830395. 3

94091830396. 4

Question Number : 16 Question Id : 9409188106 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Males are affected more than females in _____ inheritance.

1. Autosomal dominant
2. Autosomal recessive
3. X-linked dominant
4. X-linked recessive

Options :

94091830397. 1

94091830398. 2

94091830399. 3

94091830400. 4

Question Number : 17 Question Id : 9409188107 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Neurofibromatosis is an example of _____ inheritance.

1. Autosomal dominant
2. Autosomal recessive
3. X-linked dominant
4. X-linked recessive

Options :

94091830401. 1

94091830402. 2

94091830403. 3

94091830404. 4

Question Number : 18 Question Id : 9409188108 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Phenylketonuria is caused by _____ defective enzyme.

1. Iduronate 2-sulfatase
2. Phenylalanine hydroxylase
3. Trypsin
4. Maltase

Options :

94091830405. 1

94091830406. 2

94091830407. 3

94091830408. 4

Question Number : 19 Question Id : 9409188109 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following obeys the classic rules of genetics?

1. Multifactorial
2. Unifactorial
3. Mitochondrial
4. Pleiotropy

Options :

94091830409. 1

94091830410. 2

94091830411. 3

94091830412. 4

Question Number : 20 Question Id : 9409188110 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Who were the following conducted the experiments using different mutants of *Drosophila melanogaster* at the locus lozenge?

1. Oliver and Green
2. Green and Jacob
3. Morgan and Bridges
4. Muller and Sturtevant

Options :

94091830413. 1

94091830414. 2

94091830415. 3

94091830416. 4

Question Number : 21 Question Id : 9409188111 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Blood group AB is an example of _____.

1. Dominance
2. Multiple allelism
3. Co-dominance
4. Recessiveness

Options :

94091830417. 1

94091830418. 2

94091830419. 3

94091830420. 4

Question Number : 22 Question Id : 9409188112 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Rh factor is a/an _____ character.

1. Dominant
2. Recessive
3. Co-dominant
4. Intermediate

Options :

94091830421. 1

94091830422. 2

94091830423. 3

94091830424. 4

Question Number : 23 Question Id : 9409188113 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Lethal factors have a ratio of _____.

1. 3:1
2. 12:7
3. 9:3:3:1
4. 2:1

Options :

94091830425. 1

94091830426. 2

94091830427. 3

94091830428. 4

Question Number : 24 Question Id : 9409188114 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Blending inheritance is also called _____.

1. Co-dominance
2. Dominance
3. Incomplete dominance
4. Recessive

Options :

94091830429. 1

94091830430. 2

94091830431. 3

94091830432. 4

Question Number : 25 Question Id : 9409188115 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

When both dominant alleles are present together, they are _____.

1. Epistatic gene
2. Complementary gene
3. Supplementary gene
4. Single gene

Options :

94091830433. 1

94091830434. 2

94091830435. 3

94091830436. 4

Question Number : 26 Question Id : 9409188116 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Recessive epistasis has a ratio of _____.

1. 13:3
2. 2:1
3. 3:1
4. 9:3:4

Options :

94091830437. 1

94091830438. 2

94091830439. 3

94091830440. 4

Question Number : 27 Question Id : 9409188117 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

_____ is responsible for initiating the silencing in *cis* during dosage compensation in Human.

1. *Sxl*
2. *Xist*
3. *Xite*
4. *Sry*

Options :

94091830441. 1

94091830442. 2

94091830443. 3

94091830444. 4

Question Number : 28 Question Id : 9409188118 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

_____condition is associated with long bones by ossification of cartilage resulting in very short limbs.

1. Achondroplasia
2. Haemophilia
3. Polydactyly
4. Sickle cell anaemia

Options :

94091830445. 1

94091830446. 2

94091830447. 3

94091830448. 4

Question Number : 29 Question Id : 9409188119 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Dosage compensation in flies is mediated by six protein-coding genes as well as two non-coding RNA genes such as _____.

1. *xist* and *roX2*
2. *roX1* and *roX2*
3. *roX1* and *tsix*
4. *roX2* and *Dpn*

Options :

94091830449. 1

94091830450. 2

94091830451. 3

94091830452. 4

Question Number : 30 Question Id : 9409188120 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

A gene produces multiple effects and is called _____.

1. Lethal gene
2. Multiple gene
3. Single gene
4. Pleotropic gene

Options :

94091830453. 1

94091830454. 2

94091830455. 3

94091830456. 4

Question Number : 31 Question Id : 9409188121 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Linkage _____ as the distance between the two genes increases.

1. Becomes defective
2. Remains unaffected
3. Decreases
4. Increases

Options :

94091830457. 1

94091830458. 2

94091830459. 3

94091830460. 4

Question Number : 32 Question Id : 9409188122 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is untrue about the complete linkage?

1. Genes are closely located
2. Closely linked genes will separate by crossing over
3. Linked genes transmit together to the same gamete
4. Complete linkage had been observed in males of *Drosophila melanogaster*

Options :

94091830461. 1

94091830462. 2

94091830463. 3

94091830464. 4

Question Number : 33 Question Id : 9409188123 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Pairing of two homologous chromosomes is termed as _____.

1. Crossing over
2. Chiasma formation
3. Synapsis
4. Condensation

Options :

94091830465. 1

94091830466. 2

94091830467. 3

94091830468. 4

Question Number : 34 Question Id : 9409188124 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The Male *Drosophila*, having heterogametic sex consist of one copy of genes termed _____.

1. Homozygous
2. Heterozygous
3. Hemizygous
4. Unizygous

Options :

94091830469. 1

94091830470. 2

94091830471. 3

94091830472. 4

Question Number : 35 Question Id : 9409188125 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Birds and butterflies show _____type sex determination.

1. XX/ XO
2. XX/ XY
3. ZW/ XY
4. ZW/ ZZ

Options :

94091830473. 1

94091830474. 2

94091830475. 3

94091830476. 4

Question Number : 36 Question Id : 9409188126 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

If a woman is a carrier of an X-linked recessive allele for a disorder marries a normal man, their sons will have _____.

1. 25% chance of inheriting the disorder
2. 50% chance of inheriting the disorder
3. 100% chance of inheriting the disorder
4. 75% chance of inheriting the disorder

Options :

94091830477. 1

94091830478. 2

94091830479. 3

94091830480. 4

Question Number : 37 Question Id : 9409188127 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

What is the probability that the son of a color-blind father would be color-blind?

1. 0
2. 25%
3. 50%
4. 75%

Options :

94091830481. 1

94091830482. 2

94091830483. 3

94091830484. 4

Question Number : 38 Question Id : 9409188128 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Crossing over occurs when the homologous chromosomes contain _____.

1. One chromatid
2. Two chromatids
3. Four chromatids
4. Six chromatids

Options :

94091830485. 1

94091830486. 2

94091830487. 3

94091830488. 4

Question Number : 39 Question Id : 9409188129 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The mitochondrial DNA is in _____ structure.

1. Linear
2. Single stranded linear
3. Circular
4. Fragmented

Options :

94091830489. 1

94091830490. 2

94091830491. 3

94091830492. 4

Question Number : 40 Question Id : 9409188130 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Inheritance of sinistral and dextral shell coiling in the snail, *Limnaea* is an example of _____.

1. Maternal inheritance
2. Organelle inheritance
3. Nuclear inheritance
4. Infectious heredity

Options :

94091830493. 1

94091830494. 2

94091830495. 3

94091830496. 4

Question Number : 41 Question Id : 9409188131 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

____ is a type of sex determination in which the male is haploid, but the female is diploid.

1. XX: XO
2. ZZ: ZO
3. ZZ: ZW
4. Haplodiploidy

Options :

94091830497. 1

94091830498. 2

94091830499. 3

94091830500. 4

Question Number : 42 Question Id : 9409188132 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

In Melandrium, sex determination is of _____.

1. XX-XO
2. ZZ-ZW
3. XX-XY
4. XY-XO

Options :

94091830501. 1

94091830502. 2

94091830503. 3

94091830504. 4

Question Number : 43 Question Id : 9409188133 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The sex of the *Bonellia* depends on _____.

1. The age of the animal
2. Where a larva settle
3. The size of the parent body
4. Temperature

Options :

94091830505. 1

94091830506. 2

94091830507. 3

94091830508. 4

Question Number : 44 Question Id : 9409188134 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The gender in *Drosophila* is determined by the balance of _____.

1. Sets of X chromosomes and number of autosomes
2. Number of X chromosomes and number of autosomes
3. Equal number of X chromosomes and set of autosomes
4. Number of X chromosomes and set of autosomes

Options :

94091830509. 1

94091830510. 2

94091830511. 3

94091830512. 4

Question Number : 45 Question Id : 9409188135 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Flies with *X: A* ratios of greater than 1.00 or less than 0.5 were _____.

1. Abnormal and generally did not survive
2. Normal and survived
3. Abnormal and survived
4. Normal and only a few survived

Options :

94091830513. 1

94091830514. 2

94091830515. 3

94091830516. 4

Question Number : 46 Question Id : 9409188136 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The XO *Drosophila* flies are _____.

1. Doublesexes
2. Intersexes
3. Females
4. Males

Options :

94091830517. 1

94091830518. 2

94091830519. 3

94091830520. 4

Question Number : 47 Question Id : 9409188137 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Crossing over causes _____.

1. Expression of recessive genes
2. Synapsis between homologous chromosomes
3. Recombination between linked genes
4. The linkage between dominant genes

Options :

94091830521. 1

94091830522. 2

94091830523. 3

94091830524. 4

Question Number : 48 Question Id : 9409188138 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The thalidomide causes the deformities like _____.

1. Congenital disorders
2. Heart diseases
3. Eye defects
4. Malformed limbs

Options :

94091830525. 1

94091830526. 2

94091830527. 3

94091830528. 4

Question Number : 49 Question Id : 9409188139 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

SRY activates _____ transcription indicating its requirement for testis determination.

1. *Lim1*
2. *Xist*
3. *Sox9*
4. *Wnt*

Options :

94091830529. 1

94091830530. 2

94091830531. 3

94091830532. 4

Question Number : 50 Question Id : 9409188140 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is true for *Drosophila* Sex determination?

1. Two Y chromosome will produce male
2. Two X chromosome will produce female
3. Females are produced by the presence of Y chromosome
4. Males are produced by absence of Y chromosome

Options :

94091830533. 1

94091830534. 2

94091830535. 3

94091830536. 4