

Question Paper Name: 238 COMPUTATIONAL AND INTEGRATIVE SCIENCES Track 2 29th May 2019 Shift 1 Set 1
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Share Answer Key With Delivery Engine: Yes
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COMPUTATIONAL AND INTEGRATIVE SCIENCES Track 2

Group Number : 1
Group Id : 128206182
Group Maximum Duration : 0
Group Minimum Duration : 120
Revisit allowed for view? : No
Revisit allowed for edit? : No
Break time: 0
Group Marks: 100

Track 2 (Part A)

Section Id : 128206303
Section Number : 1
Section type : online
Mandatory or Optional: Mandatory
Number of Questions: 15
Number of Questions to be attempted: 15
Section Marks: 30
Display Number Panel: Yes
Group All Questions: No

Sub-Section Number: 1
Sub-Section Id: 128206486
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 12820610679 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

If earth stops rotating, the value of 'g' at the equator will

- (a) increase
- (b) decrease
- (c) remain same
- (d) become zero

Question Number : 2 Question Id : 12820610680 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If a wave enters from air to water, then what remains unchanged?

- (a) Frequency
- (b) Amplitude
- (c) Velocity
- (d) Wavelength

Options :

- 12820642223. A
- 12820642224. B
- 12820642225. C
- 12820642226. D

Question Number : 3 Question Id : 12820610681 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

How many pairs of chromosomes are present in human beings?

- (a) 26
- (b) 36
- (c) 23
- (d) 33

Options :

- 12820642227. A
- 12820642228. B
- 12820642229. C
- 12820642230. D

Question Number : 4 Question Id : 12820610682 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is an example of herbivores?

- (a) Cow
- (b) Shark
- (c) Lion
- (d) Tiger

Options :

- 12820642231. A
- 12820642232. B
- 12820642233. C
- 12820642234. D

The formula of Ozone is _____

- (a) O_3
- (b) O_2
- (c) O_4
- (d) O_6

Options :

12820642235. A

12820642236. B

12820642237. C

12820642238. D

Question Number : 6 Question Id : 12820610684 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Main site of photosynthesis

- (a) Leaf
- (b) Stem
- (c) Chloroplast
- (d) Guard cells

Options :

12820642239. A

12820642240. B

12820642241. C

12820642242. D

Question Number : 7 Question Id : 12820610685 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a quadratic equation?

- (a) $3x^2 - 5x + 9$
- (b) $x + 1/x = 1$
- (c) $x^2 - 9x = 0$
- (d) $x^3 - 2x - \sqrt{5} = 0$

Options :

12820642243. A

12820642244. B

12820642245. C

12820642246. D

Question Number : 8 Question Id : 12820610686 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What is the probability that a number selected from the numbers (1, 2, 3,.....,15) is a multiple of 4?

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- (a) $1/5$
- (b) $4/5$
- (c) $2/15$
- (d) $1/3$

Options :

- 12820642247. A
- 12820642248. B
- 12820642249. C
- 12820642250. D

Question Number : 9 Question Id : 12820610687 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Construction of a cumulative frequency table is useful in determining the

- (a) mean
- (b) mode
- (c) median
- (d) all of the above

Options :

- 12820642251. A
- 12820642252. B
- 12820642253. C
- 12820642254. D

Question Number : 10 Question Id : 12820610688 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Two natural numbers whose sum is 85 and the least common multiple is 102 are:

- (a) 30 and 55
- (b) 17 and 68
- (c) 35 and 55
- (d) 51 and 34

Options :

- 12820642255. A
- 12820642256. B
- 12820642257. C
- 12820642258. D

Question Number : 11 Question Id : 12820610689 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0



- (a) Vessel Element
(b) Sieve-tube cell
(c) Companion cell
(d) Parenchyma cell

Options :

12820642259. A
12820642260. B
12820642261. C
12820642262. D

Question Number : 12 Question Id : 12820610690 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A researcher is trying to study a enzyme-catalyzed reaction in laboratory. While the reaction solution is fully saturated with substrate, what should he do to speed up the reaction?

- (a) Add more enzyme
(b) Adjust the pH to 7.2
(c) Increase the temperature
(d) Remove some substrate

Options :

12820642263. A
12820642264. B
12820642265. C
12820642266. D

Question Number : 13 Question Id : 12820610691 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

pH of blood is

- (a) acidic
(b) alkaline
(c) neutral
(d) variable

Options :

12820642267. A
12820642268. B
12820642269. C
12820642270. D

Question Number : 14 Question Id : 12820610692 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) DNA polymerase I
- (b) DNA polymerase III
- (c) helicase
- (d) Gyrase

Options :

- 12820642271. A
- 12820642272. B
- 12820642273. C
- 12820642274. D

Question Number : 15 Question Id : 12820610693 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The edible part of coconut represents

- (a) pericarp
- (b) mesocarp
- (c) endosperm
- (d) seed coat

Options :

- 12820642275. A
- 12820642276. B
- 12820642277. C
- 12820642278. D

Track 2 (Part B)

Section Id :	128206304
Section Number :	2
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	35
Number of Questions to be attempted:	35
Section Marks:	70
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	128206487
Question Shuffling Allowed :	Yes

Question Number : 16 Question Id : 12820610694 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) $C_5H_{10}O_4$ and $C_5H_{10}O_6$
- (b) $C_5H_{10}O_4$ and $C_5H_{10}O_5$
- (c) $C_5H_{10}O_5$ and $C_5H_{10}O_4$
- (d) $C_5H_{10}O_5$ and $C_6H_{10}O_4$

Options :

12820642279. A

12820642280. B

12820642281. C

12820642282. D

Question Number : 17 Question Id : 12820610695 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

DNA molecules makes a complete turn after every

- (a) 20 Å
- (b) 34 Å
- (c) 3.4 Å
- (d) 10 base pairs

Options :

12820642283. A

12820642284. B

12820642285. C

12820642286. D

Question Number : 18 Question Id : 12820610696 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

In DNA, guanine lies opposite

- (a) Uracil
- (b) Cytosine
- (c) Adenine
- (d) thymine

Options :

12820642287. A

12820642288. B

12820642289. C

12820642290. D

Question Number : 19 Question Id : 12820610697 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Formation of mRNA from DNA is called

- (a) Transformation
- (b) Transduction
- (c) Translation
- (d) Transcription

12820642291. A
12820642292. B
12820642293. C
12820642294. D

Question Number : 20 Question Id : 12820610698 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following enzyme is required to release the tension imposed by uncoiling of strands?

- (a) Endonuclease
(b) DNA ligase
(c) DNA gyrase
(d) DNA helicase

Options :

12820642295. A
12820642296. B
12820642297. C
12820642298. D

Question Number : 21 Question Id : 12820610699 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

In tissue / bacterial culture glassware and nutrients are sterilized through

- (a) Water bath at 200° C
(b) Dry air oven at 200° C
(c) Dehumidifier
(d) Autoclave

Options :

12820642299. A
12820642300. B
12820642301. C
12820642302. D

Question Number : 22 Question Id : 12820610700 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Okazaki segments are formed during

- (a) Transduction
(b) Transcription
(c) Replication
(d) Translation

Options :

12820642303. A
12820642304. B
12820642305. C

Question Number : 23 Question Id : 12820610701 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Genetically engineered bacteria are being used in commercial production of

- (a) Melatonin
- (b) Testoteron
- (c) Human insulin
- (d) Thyroxine

Options :

12820642307. A

12820642308. B

12820642309. C

12820642310. D

Question Number : 24 Question Id : 12820610702 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Haploid plant cultures are got from

- (a) Leaves
- (b) Root tip
- (c) Pollen grain
- (d) Buds

Options :

12820642311. A

12820642312. B

12820642313. C

12820642314. D

Question Number : 25 Question Id : 12820610703 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Double chained DNA strand is made radioactive in both its chains. It is allowed to replicate twice in non-radioactive medium. The result would be

- (a) All strands have radioactivity
- (b) Half the strands have radioactivity
- (c) Three strands have radioactivity
- (d) Radioactivity is absent in all strands

Options :

12820642315. A

12820642316. B

12820642317. C

12820642318. D

The procedure of aligning two sequences by searching for patterns that is in the same order in the sequences sequence alignment

- (a) sequence alignment
- (b) pair wise alignment
- (c) multiple sequence alignment
- (d) all of these

Options :

12820642319. A

12820642320. B

12820642321. C

12820642322. D

Question Number : 27 Question Id : 12820610705 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A single water molecule can form how many hydrogen bonds

- (a) 3
- (b) 2
- (c) 1
- (d) 4

Options :

12820642323. A

12820642324. B

12820642325. C

12820642326. D

Question Number : 28 Question Id : 12820610706 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

All are sequence alignment tools except

- (a) Rasmol
- (b) BLAST
- (c) FASTA
- (d) Clustal W

Options :

12820642327. A

12820642328. B

12820642329. C

12820642330. D

Question Number : 29 Question Id : 12820610707 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

the alignment procedure that tries to align the entire sequence is

- (a) multiple sequence alignment
- (b) pair wise alignment
- (c) global alignment
- (d) local alignment

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Options :

- 12820642331. A
- 12820642332. B
- 12820642333. C
- 12820642334. D

Question Number : 30 Question Id : 12820610708 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A totipotent cell means

- (a) An undifferentiated cell capable of developing into a system or entire plant
- (b) An undifferentiated cell capable of developing into an organ
- (c) An undifferentiated cell capable of developing into complete embryo
- (d) Cell which lacks the capability differentiate into an organ or system

Options :

- 12820642335. A
- 12820642336. B
- 12820642337. C
- 12820642338. D

Question Number : 31 Question Id : 12820610709 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

DNA Polymerase I have

- (a) Only 5' to 3' exonuclease activity
- (b) Only 3' to 5' exonuclease activity
- (c) Both 5' to 3' and 3' to 5' exonuclease activity
- (d) No exonuclease activity

Options :

- 12820642339. A
- 12820642340. B
- 12820642341. C
- 12820642342. D

Question Number : 32 Question Id : 12820610710 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) Determine gene sequence
- (b) Amplify RNA sequence
- (c) Amplify DNA sequence
- (d) Determine gene expression

Options :

- 12820642343. A
- 12820642344. B
- 12820642345. C
- 12820642346. D

Question Number : 33 Question Id : 12820610711 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

BlastX is used to

- (a) Search protein database for a translated nucleotide query
- (b) Search nucleotide database for a protein sequence query
- (c) Search a translated nucleotide database for a translated nucleotide query
- (d) Search protein database for a protein sequence query

Options :

- 12820642347. A
- 12820642348. B
- 12820642349. C
- 12820642350. D

Question Number : 34 Question Id : 12820610712 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Vectors with ability to replicate in two different species are called

- (a) Smart vectors
- (b) Shuttle Vectors
- (c) Transfer vectors
- (d) Migratory vectors

Options :

- 12820642351. A
- 12820642352. B
- 12820642353. C
- 12820642354. D

Question Number : 35 Question Id : 12820610713 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) $n = 21$ and $x = 21$
- (b) $n = 21$ and $x = 14$
- (c) $n = 21$ and $x = 7$
- (d) $n = 7$ and $x = 21$

Options :

- 12820642355. A
- 12820642356. B
- 12820642357. C
- 12820642358. D

Question Number : 36 Question Id : 12820610714 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A protein made up of two identical subunits with MW of 50 kDa will show how many bands after resolving on SDS polyacrylamide gel followed by staining and destaining.

- (a) single band of 50 kDa
- (b) two bands of 25 kDa each
- (c) single band of 25 kDa
- (d) Two bands of 50 kDa each

Options :

- 12820642359. A
- 12820642360. B
- 12820642361. C
- 12820642362. D

Question Number : 37 Question Id : 12820610715 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following allow the primary transcript to process into two or more different mRNAs

- (a) Frameshift mutation
- (b) Alternative splicing
- (c) Alternative binding
- (d) Multiple enzyme binding sites

Options :

- 12820642363. A
- 12820642364. B
- 12820642365. C
- 12820642366. D

Question Number : 38 Question Id : 12820610716 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) Gene Regulation
- (b) DNA Replication
- (c) Stress Signaling
- (d) Defense Response

Options :

- 12820642367. A
- 12820642368. B
- 12820642369. C
- 12820642370. D

Question Number : 39 Question Id : 12820610717 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is odd one?

- (a) enhancer
- (b) copia elements
- (c) retrotransposons
- (d) FB elements

Options :

- 12820642371. A
- 12820642372. B
- 12820642373. C
- 12820642374. D

Question Number : 40 Question Id : 12820610718 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of these is never involved in a PCR reaction

- (a) EtBr
- (b) dNTPs
- (c) Primers
- (d) DMSO

Options :

- 12820642375. A
- 12820642376. B
- 12820642377. C
- 12820642378. D

Question Number : 41 Question Id : 12820610719 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

- (a) Telomeres
- (b) Termini
- (c) Sticky ends
- (d) Oligonucleotides

Options :

- 12820642379. A
- 12820642380. B
- 12820642381. C
- 12820642382. D

Question Number : 42 Question Id : 12820610720 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

. Among the following sequences, which is likely to be the restriction endonuclease site.

- (a) TAAATT
- (b) GAACCT
- (c) GTCGAC
- (d) GCGGGC

Options :

- 12820642383. A
- 12820642384. B
- 12820642385. C
- 12820642386. D

Question Number : 43 Question Id : 12820610721 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following reagent/step is not routinely used in polymerase chain reaction.

- (a) DNA ligase
- (b) Oligonucleotide primers
- (c) Taq DNA Polymerase
- (d) Denaturation using heating

Options :

- 12820642387. A
- 12820642388. B
- 12820642389. C
- 12820642390. D

Question Number : 44 Question Id : 12820610722 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

rate of migration of DNA on an agarose gel during gel electrophoresis primarily depends on?

- (a) number of DNA fragments
- (b) GC composition
- (c) size of DNA fragments
- (d) negative charge of the DNA

Options :

- 12820642391. A
- 12820642392. B
- 12820642393. C
- 12820642394. D

Question Number : 45 Question Id : 12820610723 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

If a DNA segment has 22% adenine and 28% cytosine, then what would be the percentage of guanine?

- (a) 22%
- (b) 28%
- (c) 50%
- (d) 62%

Options :

- 12820642395. A
- 12820642396. B
- 12820642397. C
- 12820642398. D

Question Number : 46 Question Id : 12820610724 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Anticodon is present in?

- (a) DNA
- (b) mRNA
- (c) tRNA
- (d) rRNA

Options :

- 12820642399. A
- 12820642400. B
- 12820642401. C
- 12820642402. D

Question Number : 47 Question Id : 12820610725 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

- (a) IgA
- (b) IgE
- (c) IgG
- (d) IgM

Options :

- 12820642403. A
- 12820642404. B
- 12820642405. C
- 12820642406. D

Question Number : 48 Question Id : 12820610726 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following hormones is responsible for closing stomata?

- (a) auxin
- (b) cytokinin
- (c) ethylene
- (d) abscisic acid

Options :

- 12820642407. A
- 12820642408. B
- 12820642409. C
- 12820642410. D

Question Number : 49 Question Id : 12820610727 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following enzymes is not required for E. coli DNA replication?

- (a) Gyrase
- (b) DNA polymerase I
- (c) Telomerase
- (d) DNA ligase

Options :

- 12820642411. A
- 12820642412. B
- 12820642413. C
- 12820642414. D

Question Number : 50 Question Id : 12820610728 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

(a) Alpha helices and Beta sheets

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(b) Smaller peptides joined together with glycosidic bonds

(c) Four building blocks Adenine, Guanine, Cytosine and Thymine

(d) Smaller subunits of lipids and glycerol

Options :

12820642415. A

12820642416. B

12820642417. C

12820642418. D

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