National Testing Agency

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M.Tech.(Biotechnology)Computational Biology

Group Number :	1
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Part - A

Section Id :	128206381
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	30
Number of Questions to be attempted:	30
Section Marks:	30
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	128206632
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 12820613403 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a ketose sugar?

(a) Glucose

(b) Fructose

(c) Mannose

(d) Talose

Options :

12820652875. A

12820652876. B

12820652877. C

12820652878. D

Question Number : 2 Question Id : 12820613404 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Photosytem II is most reactive at

(a) 700 nm

(b) 680 nm

(c) 620 nm

(d) 710 nm

Options :

12820652879. A

12820652880. B

12820652881. C

12820652882. D

Question Number : 3 Question Id : 12820613405 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Bacterial molecular taxonomy uses

(a) 5S RNA

(b) 30S RNA

(c) 16S RNA

(d) 60S RNA

Options :

12820652883. A

12820652884. B

12820652885. C

12820652886. D

Question Number : 4 Question Id : 12820613406 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The endosymbiotic theory deals with the origins of

(a) Chloroplast

(b) Ribosome

(c) Centrosome

(d) Nucleus

Options :

12820652887. A

12820652888. B

12820652889. C

12820652890. D

Question Number : 5 Question Id : 12820613407 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which heart chamber pumps oxygen-rich blood to the rest of the body

(a) Right ventricle

(b) Left ventricle

(c) Right atrium

(d) Left atrium

Options :

12820652891. A

12820652892. B

12820652893. C

12820652894. D

Question Number : 6 Question Id : 12820613408 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which could be the best indicator of SO_2 pollution

(a) Lichen

(b) Diatoms

(c) Algae

(d) Bryophyta

Options :

12820652895. A

12820652896. B

12820652897. C

12820652898. D

Question Number : 7 Question Id : 12820613409 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correct order of decrease in acidic character of the following compounds cyclohexanol (I), acetic acid (II), 2,6-dinitrophenol (III) and phenol (IV) is

(a) III > II > IV > I

(b) I > II > III > IV

(c) II > IV > III> I

(d) II > III > IV > I

Options :

12820652899. A

12820652900. B

12820652901. C

12820652902. D

Question Number : 8 Question Id : 12820613410 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following is sulphur containing amino acid

(a) Alanine

(b) Glycine

(c) Cystine

(d) Argenine

Options :

12820652903. A

12820652904. B

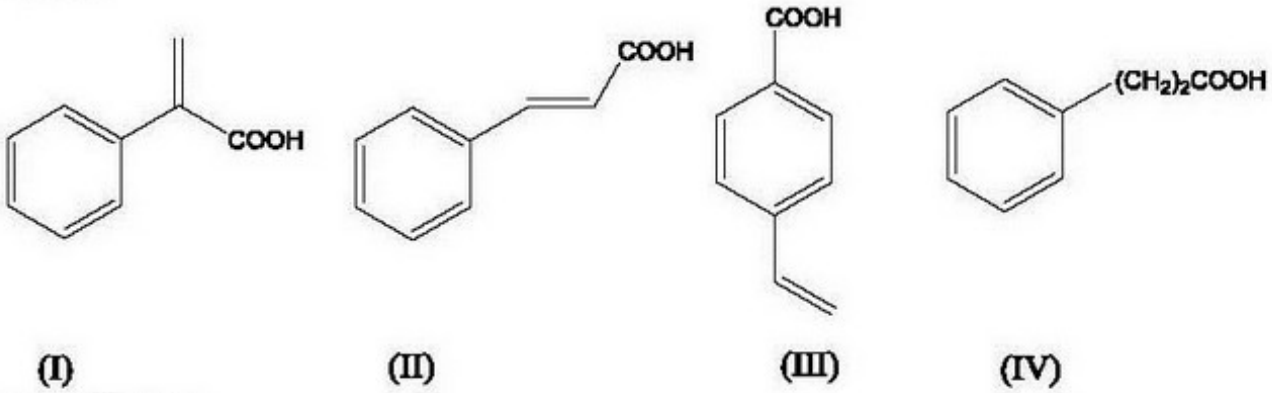
12820652905. C

12820652906. D

Question Number : 9 Question Id : 12820613411 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An organic compound 'P' with molecular formula $C_9H_8O_2$ on oxidation gives benzoic acid as one of the products. The possible structure/s of compound P is/are



(I) (II) (III) (IV)

(a) I and III

(b) II and IV

(c) I and II

(d) II only

Options :

12820652907. A

12820652908. B

12820652909. C

12820652910. D

Question Number : 10 Question Id : 12820613412 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following statements is correct?

(a) UV spectroscopy is attributed to electronic transitions

(b) IR spectroscopy is attributed to rotational transitions

(c) H_2O absorbs visible light

(d) FTIR spectroscopy is used to study rotational transitions

Options :

12820652911. A

12820652912. B

12820652913. C

12820652914. D

Question Number : 11 Question Id : 12820613413 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the role of inhibitor in catalytic reaction?

(a) Increase the rate

(b) Reduce the rate

(c) Increase the yield

(d) Reduce the yield

Options :

12820652915. A

12820652916. B

12820652917. C

12820652918. D

Question Number : 12 Question Id : 12820613414 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following ions have zero crystal field stabilization energy (CFSE)

(a) Fe^{2+}

(b) Zn^{2+}

(c) Co^{3+}

(d) Ni^{2+}

Options :

12820652919. A

12820652920. B

12820652921. C

12820652922. D

Question Number : 13 Question Id : 12820613415 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The shapes of XeF_5^+ and XeF_5^-, respectively, are

(a) pentagonal planar and square pyramidal

(b) pentagonal planar and trigonal bipyramidal

(c) square pyramidal and pentagonal bipyramidal

(d) square pyramidal and pentagonal planar

Options :

12820652923. A

12820652924. B

12820652925. C

12820652926. D

Question Number : 14 Question Id : 12820613416 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The process which decreases the entropy of the universe is

(a) reversible process

(b) irreversible process

(c) impossible process

(d) possible process

Options :

12820652927. A

12820652928. B

12820652929. C

12820652930. D

Question Number : 15 Question Id : 12820613417 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

PET stands for

(a) polyethylene terephthalate

(b) polyethyl terephthalate

(c) para ethyl terephthalic acid

(d) para ethyl terephthalate

Options :

12820652931. A

12820652932. B

12820652933. C

12820652934. D

Question Number : 16 Question Id : 12820613418 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Friction works in a direction _____ to the direction of object's motion.

(a) Same

(b) Perpendicular

(c) Opposite

(d) Downwards

Options :

12820652935. A

12820652936. B

12820652937. C

12820652938. D

Question Number : 17 Question Id : 12820613419 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among these is NOT a valid conservation law of classical Physics?

(a) Law of conservation of energy

(b) Law of conservation of angular momentum

(c) Law of conservation of current

(d) Law of conservation of charge

Options :

12820652939. A

12820652940. B

12820652941. C

12820652942. D

Question Number : 18 Question Id : 12820613420 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The magnitude of charge of an electron is

(a) 2.602×10^{-19}

(b) 1.602×10^{-19}

(c) 4.327×10^{-6}

(d) 0

Options :

12820652943. A

12820652944. B

12820652945. C

12820652946. D

Question Number : 19 Question Id : 12820613421 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A concave mirror's focus is

(a) At the pole

(b) Real

(c) Virtual

(d) Undefined

Options :

12820652947. A

12820652948. B

12820652949. C

12820652950. D

Question Number : 20 Question Id : 12820613422 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A body starts at rest and travels 120 cm in the 8^{th} second. It's acceleration is

(a) 9.6 m/s^2

(b) 0.16 m/s^2

(c) 0.34 m/s^2

(d) 1.12 m/s^2

Options :

12820652951. A

12820652952. B

12820652953. C

12820652954. D

Question Number : 21 Question Id : 12820613423 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A particle performs linear S.H.M. at a particular instant, velocity of particle is 'u' and acceleration is 'α' while at another instant velocity is 'v' and acceleration is 'β' ($0< \alpha <\beta$). The distance between the two positions is,

(a) $(u^2-v^2)/(\alpha+\beta)$

(b) $(u^2+v^2)/(\alpha+\beta)$

(c) $(u^2-v^2)/(\alpha-\beta)$

(d) $(u^2+v^2)/(\alpha-\beta)$

Options :

12820652955. A

12820652956. B

12820652957. C

12820652958. D

Question Number : 22 Question Id : 12820613424 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two similar wires A and B are made of different materials. A is twice more elastic than B. When same force is applied, the ratio of elongation of B to A is

(a) 1 : 1

(b) 1 : 4

(c) 2 : 1

(d) 4 : 1

Options :

12820652959. A

12820652960. B

12820652961. C

12820652962. D

Question Number : 23 Question Id : 12820613425 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In compound microscope, focal length and aperture of the object used is respectively

(a) large and large

(b) large and small

(c) short and large

(d) short and small

Options :

12820652963. A

12820652964. B

12820652965. C

12820652966. D

Question Number : 24 Question Id : 12820613426 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If temperature of a black body increases from 7 °C to 287 °C, then the rate of energy radiation increases by

(a) $(287/7)^4$

(b) 16

(c) 4

(d) 2

Options :

12820652967. A

12820652968. B

12820652969. C

12820652970. D

Question Number : 25 Question Id : 12820613427 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the vectors $-3\hat{i}+4\hat{j}-2\hat{k}$, $-\hat{i}+2\hat{k}$ and $\hat{i}-p\hat{j}$ are coplanar, then the value of p is

(a) p = 2
(b) p = -1
(c) p =0
(d) p =1

Options :

12820652971. A

12820652972. B

12820652973. C

12820652974. D

Question Number : 26 Question Id : 12820613428 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following equation

If $A=\begin{bmatrix} 2 & 3 \\ 5 & -2 \end{bmatrix}$ be such that $A^{-1}=kA$, then k equals to

(a) 19
(b) 1/19
(c) -19
(d) -1/19

Options :

12820652975. A

12820652976. B

12820652977. C

12820652978. D

Question Number : 27 Question Id : 12820613429 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following equation

$f(x)=\frac{e^{x^2}-\cos x}{x^2}$, for $x\neq 0$ is continuous at $x=0$, then $f(0)$ is equal to

(a) 3/2
(b) -3/2
(c) ½
(d) 1

Options :

12820652979. A

12820652980. B

12820652981. C

12820652982. D

Question Number : 28 Question Id : 12820613430 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The function f(x) = log(x)/x is increasing in the interval

(a) (1, 2e)

(b) (0, e)

(c) (2, 2e)

(d) (1/e, 2e)

Options :

12820652983. A

12820652984. B

12820652985. C

12820652986. D

Question Number : 29 Question Id : 12820613431 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the function f(x) is continuous on its domain where

$$\begin{aligned} f(x) &= x^2 + ax + b, \quad 0 \le x \le 2 \\ &= 4x - 1, \quad 2 < x \le 4 \\ &= ax^2 + 17b, \quad 4 < x \le 6 \end{aligned}$$

Then the values of a and b are

(a) 1, -1

(b) -1, 2

(c) 2, -1

(d) -2, 1

Options :

12820652987. A

12820652988. B

12820652989. C

12820652990. D

Question Number : 30 Question Id : 12820613432 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

You are given the information that log 2 = 0.3010 and log 3 = 0.4771, then the value of $\log_5 512$ is:

(a) 2.870

(b) 2.967

(c) 3.876

(d) 3.912

Options :

12820652991. A

12820652992. B

12820652993. C

12820652994. D

Part - B

Section Id :	128206382
Section Number :	2
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	70
Section Marks:	70
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	128206633
Question Shuffling Allowed :	Yes

Question Number : 31 Question Id : 12820613433 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the correct order of organization of genetic material from largest to smallest?

(a) genome, chromosome, gene, nucleotide

(b) nucleotide, gene, chromosome, genome

(c) gene, nucleotide, chromosome, genome

(d) chromosome, genome, nucleotide, gene

Options :

12820652995. A

12820652996. B

12820652997. C

12820652998. D

Question Number : 32 Question Id : 12820613434 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Short DNA sequence having single occurrence in a genome is called

(a) expressed sequence tag

(b) sequence tagged site

(c) promoter sequence

(d) transcription start site (TSS)

Options :

12820652999. A

12820653000. B

12820653001. C

12820653002. D

Question Number : 33 Question Id : 12820613435 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Central Dogma of life is DNA -> RNA -> Protein. However, RNA can be converted into complementary DNA (cDNA). This process is called

(a) nuclease digestion

(b) protein complementation

(c) PCR amplification

(d) reverse transcription

Options :

12820653003. A

12820653004. B

12820653005. C

12820653006. D

Question Number : 34 Question Id : 12820613436 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What type of bond is very prevalent in lipids and gives lipids their properties?

(a) polar covalent

(b) nonpolar covalent

(c) strong ionic

(d) weak ionic

Options :

12820653007. A

12820653008. B

12820653009. C

12820653010. D

Question Number : 35 Question Id : 12820613437 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Compared to an acidic solution at pH 5, a basic solution at pH 8 has

(a) 1000 times more hydrogen ions.

(b) 1000 times less hydrogen ions.

(c) 100 times less hydrogen ions.

(d) the same number of hydrogen ions but more hydroxide ions.

Options :

12820653011. A

12820653012. B

12820653013. C

12820653014. D

Question Number : 36 Question Id : 12820613438 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which type of molecule always contains phosphate groups?

(a) carbohydrates

(b) lipids

(c) proteins

(d) nucleic acids

Options :

12820653015. A

12820653016. B

12820653017. C

12820653018. D

Question Number : 37 Question Id : 12820613439 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many diastereomers would $CH_3CH(OH)CH(OH)CH_3$ have?

(a) 1

(b) 2

(c) 3

(d) 0

Options :

12820653019. A

12820653020. B

12820653021. C

12820653022. D

Question Number : 38 Question Id : 12820613440 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What type of bonds join monomer subunits in biopolymers?

(a) ionic bonds

(b) covalent bonds

(c) hydrogen bonds

(d) hydrophobic bonds

Options :

12820653023. A

12820653024. B

12820653025. C

12820653026. D

Question Number : 39 Question Id : 12820613441 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which polysaccharide has the greatest number of branches?
(a) cellulose
(b) chitin
(c) amylose
(d) glycogen

Options :

12820653027. A

12820653028. B

12820653029. C

12820653030. D

Question Number : 40 Question Id : 12820613442 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following polysaccharide containing unbranched β glucose molecules cannot be digested by humans?
(a) cellulose
(b) chitin
(c) starch
(d) glycogen

Options :

12820653031. A

12820653032. B

12820653033. C

12820653034. D

Question Number : 41 Question Id : 12820613443 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Vioxx and other prescription nonsteroidal anti-inflammatory drugs (NSAIDs) are potent inhibitors of the cyclooxygenase-2 (COX-2) enzyme. High substrate concentrations reduce the efficacy of inhibition by these drugs. These drugs are
(a) competitive inhibitors.
(b) noncompetitive inhibitors.
(c) allosteric regulators.
(d) feedback inhibitors.

Options :

12820653035. A

12820653036. B

12820653037. C

12820653038. D

Question Number : 42 Question Id : 12820613444 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which cellular structure is common to all three domains of life- Bacteria, Archaea and Eukarya?

(a) nucleus

(b) endoplasmic reticulum

(c) mitochondria

(d) phospholipid bilayer cell membrane

Options :

12820653039. A

12820653040. B

12820653041. C

12820653042. D

Question Number : 43 Question Id : 12820613445 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Which part of an animal cell contains enzymes responsible for biosynthesis of membrane lipids?

(a) endoplasmic reticulum

(b) nucleus

(c) lysosomes

(d) golgi

Options :

12820653043. A

12820653044. B

12820653045. C

12820653046. D

Question Number : 44 Question Id : 12820613446 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which structure is common to plant *and* animal cells?

(a) chloroplast

(b) central vacuole

(c) mitochondrion

(d) centriole

Options :

12820653047. A

12820653048. B

12820653049. C

12820653050. D

Question Number : 45 Question Id : 12820613447 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Taxol is a drug approved for the treatment of breast cancer and is known to prevent depolymerization of microtubules. Which of the following cellular function that affects cancer cells more than normal cells might Taxol interfere with?

(a) maintaining cell shape
(b) cell motility
(c) chromosome movements in cell division
(d) cleavage furrow formation in cell division

Options :

12820653051. A

12820653052. B

12820653053. C

12820653054. D

Question Number : 46 Question Id : 12820613448 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which compartments of the mitochondria and the chloroplasts are most similar to the cytosol of a eukaryotic cell?

(a) the mitochondrial intermembrane space and the lumen of the thylakoids
(b) the mitochondrial intermembrane space and the stromal space
(c) the matrix space and the stromal space
(d) the matrix space and the lumen of the thylakoids

Options :

12820653055. A

12820653056. B

12820653057. C

12820653058. D

Question Number : 47 Question Id : 12820613449 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A eukaryotic cell carries out phagocytosis and engulfs a bacterial cell, which ends up in the resulting food vacuole. To go from the cytosol of this bacterial cell to outside of the eukaryotic cell that has taken it in, what is the least number of biological membranes that would have to be crossed?

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

Options :

12820653059. A

12820653060. B

12820653061. C

12820653062. D

Question Number : 48 Question Id : 12820613450 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Which of the following does NOT need to happen during a successful mitotic cell division?

(a) single-chromatid chromosomes must be segregated in full sets of the genome.

(b) exchange of DNA between homologous chromosomes must happen before metaphase.

(c) the chromatin must condense fully so that the chromosomes are compact.

(d) microtubules must be assembled as part of the spindle apparatus.

Options :

12820653063. A

12820653064. B

12820653065. C

12820653066. D

Question Number : 49 Question Id : 12820613451 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT a typical trait of cancerous cells that distinguishes them from normal somatic cells?

(a) cancer cells often deactivate their apoptosis systems.

(b) the cell cycle often proceeds faster in cancer cells.

(c) cancer cells are more mobile and less dependent on anchorage.

(d) cancer cells have more effective DNA repair activities.

Options :

12820653067. A

12820653068. B

12820653069. C

12820653070. D

Question Number : 50 Question Id : 12820613452 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

ABO blood type in humans exhibits codominance and multiple alleles. What is the likelihood of a type A father and a type A mother having a type O child?

(a) it is impossible.

(b) 25% if both parents are heterozygous

(c) 50% if both parents are heterozygous

(d) 25% if only the father is heterozygous

Options :

12820653071. A

12820653072. B

12820653073. C

12820653074. D

Question Number : 51 Question Id : 12820613453 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The nucleotide analogue used in DNA sequencing by chain termination method is

(a) 1',3'-dideoxy nucleoside triphosphate

(b) 2',3'-dideoxy nucleoside triphosphate

(c) 2',4'-dideoxy nucleoside triphosphate

(d) 2',5'-dideoxy nucleoside triphosphate

Options :

12820653075. A

12820653076. B

12820653077. C

12820653078. D

Question Number : 52 Question Id : 12820613454 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following product is commercially produced by animal cell culture?

(a) insulin

(b) interferon

(c) tissue plasminogen activator

(d) hepatitis B vaccine

Options :

12820653079. A

12820653080. B

12820653081. C

12820653082. D

Question Number : 53 Question Id : 12820613455 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An overlapping series of clones or sequence reads that corresponds to a contiguous segment of source genome is called a

(a) clone library

(b) contig

(c) single nucleotide polymorphism (SNP)

(d) sequence tagged site (STS)

Options :

12820653083. A

12820653084. B

12820653085. C

12820653086. D

Question Number : 54 Question Id : 12820613456 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Impurities like bacteria and viruses may be removed from water using filtration techniques. Filtration rate through porous bed can be estimated using

(a) Fick's Law of Diffusion

(b) Poiseulle's Law

(c) Ohm's Law

(d) Newton's Law

Options :

12820653087. A

12820653088. B

12820653089. C

12820653090. D

Question Number : 55 Question Id : 12820613457 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Penicillins are antibacterial antibiotics and belong to the class of

(a) Macrolides

(b) Polyenes

(c) β- Lactams

(d) Aminoglycosides

Options :

12820653091. A

12820653092. B

12820653093. C

12820653094. D

Question Number : 56 Question Id : 12820613458 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Different types of energy waves are used in medical diagnosis and therapy. Which one is non-ionizing?

(a) soft X ray

(b) gamma ray

(c) ultrasound

(d) ultraviolet

Options :

12820653095. A

12820653096. B

12820653097. C

12820653098. D

Question Number : 57 Question Id : 12820613459 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Genes are packed in bacterial chromosome by

(a) acid proteins

(b) histones

(c) basic proteins

(d) actin

Options :

12820653099. A

12820653100. B

12820653101. C

12820653102. D

Question Number : 58 Question Id : 12820613460 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Entry of pollen tube through the end opposite to micropyle is

(a) porogamy

(b) chalazogamy

(c) mesogamy

(d) syngamy

Options :

12820653103. A

12820653104. B

12820653105. C

12820653106. D

Question Number : 59 Question Id : 12820613461 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following enzymes does not require a primer?

(a) RNA dependent DNA polymerase

(b) DNA dependent DNA polymerase

(c) DNA dependent RNA polymerase

(d) *Taq* DNA polymerase

Options :

12820653107. A

12820653108. B

12820653109. C

12820653110. D

Question Number : 60 Question Id : 12820613462 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The phenomenon of genetic drift found in populations that are

(a) small and inbred

(b) undergoing gene flow

(c) allopatric

(d) large and panmictic

Options :

12820653111. A

12820653112. B

12820653113. C

12820653114. D

Question Number : 61 Question Id : 12820613463 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A book contains 50 pages. A page is chosen at random. The chance that the sum of the digits on the page is equal to 6 is

(a) 0.1

(b) 0.12

(c) 0.04

(d) 0.02

Options :

12820653115. A

12820653116. B

12820653117. C

12820653118. D

Question Number : 62 Question Id : 12820613464 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of a continuous probability distribution

(a) Bernoulli distribution

(b) Poisson distribution

(c) normal distribution

(d) multinomial distribution

Options :

12820653119. A

12820653120. B

12820653121. C

12820653122. D

Question Number : 63 Question Id : 12820613465 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An ordinary differential equation (ODE) model of biochemical networks is based on

(a) continuously-valued variables for the concentrations of chemical species.

(b) the probability of a reaction happening in a given situation.

(c) boolean logic (yes/no) underlying the reactions.

(d) fixed rules defined by experts.

Options :

12820653123. A

12820653124. B

12820653125. C

12820653126. D

Question Number : 64 Question Id : 12820613466 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

You want to calculate the probability of one event AND a second event happening together. The individual event probabilities, in this case, will be

(a) added

(b) subtracted

(c) multiplied

(d) divided

Options :

12820653127. A

12820653128. B

12820653129. C

12820653130. D

Question Number : 65 Question Id : 12820613467 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the Pearson correlation between two variables X and Y is -0.85, it implies

(a) with increase in the value of Y, X increases

(b) there is a strong inverse association between X and Y

(c) there's weak association between X and Y

(d) there's association between X and Y

Options :

12820653131. A

12820653132. B

12820653133. C

12820653134. D

Question Number : 66 Question Id : 12820613468 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about correlation r is true?

(a) a correlation of 0.2 means that 20% of the points are highly correlated.

(b) perfect correlation, that is, when the points lie exactly on a straight line, results in r = 0.

(c) correlation is symmetric, i.e., r between x and y is the same as r between y and x.

(d) a correlation of 0.75 indicates a relationship that is 3 times as linear as one for which the correlation is only 0.25.

Options :

12820653135. A

12820653136. B

12820653137. C

12820653138. D

Question Number : 67 Question Id : 12820613469 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many six digit numbers greater than 800,0000 can be made using 1, 1, 5, 5, 5, 8?

(a) 10

(b) 60

(c) 64

(d) 120

Options :

12820653139. A

12820653140. B

12820653141. C

12820653142. D

Question Number : 68 Question Id : 12820613470 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which is the 3rd term of the expansion $(x - 2y)^7$

(a) $84x^5y^2$

(b) x^7

(c) $-14x^6y$

(d) y^7

Options :

12820653143. A

12820653144. B

12820653145. C

12820653146. D

Question Number : 69 Question Id : 12820613471 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Simplify $(n-2)!/(n-1)!$

(a) $(n-3)/(n-1)$

(b) $(n-2)$

(c) $1/(n-1)$

(d) $1/n(n-1)$

Options :

12820653147. A

12820653148. B

12820653149. C

12820653150. D

Question Number : 70 Question Id : 12820613472 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Considering a normal distribution, spread is decreased and height of the distribution is increased for

(a) a smaller value of standard deviation

(b) a higher value of standard deviation

(c) a smaller value of mean

(d) a higher value of mean

Options :

12820653151. A

12820653152. B

12820653153. C

12820653154. D

Question Number : 71 Question Id : 12820613473 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Surface integral is used to compute

(a) length

(b) area

(c) volume

(d) density

Options :

12820653155. A

12820653156. B

12820653157. C

12820653158. D

Question Number : 72 Question Id : 12820613474 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The sum of the percent frequencies for all classes will always equal

(a) 1

(b) the number of classes

(c) the number of items in the study

(d) 100

Options :

12820653159. A

12820653160. B

12820653161. C

12820653162. D

Question Number : 73 Question Id : 12820613475 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following variables is not categorical?

(a) age of a person.

(b) gender of a person: male or female.

(c) choice on a test item: true or false.

(d) marital status of a person (single, married, divorced, other)

Options :

12820653163. A

12820653164. B

12820653165. C

12820653166. D

Question Number : 74 Question Id : 12820613476 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does a significant test statistic tell us?

(a) there is an important effect.

(b) that the test statistic is larger than we would expect if there were no effect in the population.

(c) the null hypothesis is false.

(d) the alternative hypothesis is false.

Options :

12820653167. A

12820653168. B

12820653169. C

12820653170. D

Question Number : 75 Question Id : 12820613477 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Nth root of product of values $x_1, x_2, x_3, ..., x_n$ is called

(a) arithmetic mean

(b) geometric mean

(c) variance

(d) harmonic mean

Options :

12820653171. A

12820653172. B

12820653173. C

12820653174. D

Question Number : 76 Question Id : 12820613478 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two events, A and B, are said to be mutually exclusive if:

(a) P(A | B) = 1

(b) P(B | A) = 1

(c) P(A and B) = 1

(d) P(A and B) = 0

Options :

12820653175. A

12820653176. B

12820653177. C

12820653178. D

Question Number : 77 Question Id : 12820613479 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If u = (1, k, -3) and v = (2, -5, 4), find k, such that u and v are orthogonal

(a) 2

(b) -2

(c) -1

(d) 1

Options :

12820653179. A

12820653180. B

12820653181. C

12820653182. D

Question Number : 78 Question Id : 12820613480 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If u = [3 −1] then -2/3 u is

(a) [−2 −2/3]

(b) [2 −2/3]

(c) [−2 2/3]

(d) [2 2/3]

Options :

12820653183. A

12820653184. B

12820653185. C

12820653186. D

Question Number : 79 Question Id : 12820613481 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If A = [0 -1 1 0], then the eigenvalues of A are

(a) i and -i

(b) 1 and -1

(c) i and 1

(d) -i and -1

Options :

12820653187. A

12820653188. B

12820653189. C

12820653190. D

Question Number : 80 Question Id : 12820613482 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a necessary condition for continuity

(a) existence of first order partial derivative

(b) existence of second order partial derivative

(c) existence of both first order and second order partial derivative

(d) existence of either first order or second order partial derivative

Options :

12820653191. A

12820653192. B

12820653193. C

12820653194. D

Question Number : 81 Question Id : 12820613483 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a < b, and if u > 0, then

(a) u a < u b

(b) u a > u b

(c) u a ≠ u b

(d) u a = u b

Options :

12820653195. A

12820653196. B

12820653197. C

12820653198. D

Question Number : 82 Question Id : 12820613484 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The waiting time for the customer in the bank is given by $f(t) = 1/12\ e^{-t/12}$. What is the probability that the customer have to wait between 9 and 12 minutes?

(a) 10 %

(b) 1%

(c) 50 %

(d) 25%

Options :

12820653199. A

12820653200. B

12820653201. C

12820653202. D

Question Number : 83 Question Id : 12820613485 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The mean and variance of the probability density function $f(x) = 2 - 2x,\ 0 \leqq x \leqq 1$ is

(a) 1/3 and 1/18

(b) 1/3 and √1/18

(c) 1 and 1/18

(d) 1/3 and 1/6

Options :

12820653203. A

12820653204. B

12820653205. C

12820653206. D

Question Number : 84 Question Id : 12820613486 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is $Real\left(\frac{3+4i}{1-i}\right)$?

(a) ½

(b) -7/2

(c) -½

(d) 7/2

Options :

12820653207. A

12820653208. B

12820653209. C

12820653210. D

Question Number : 85 Question Id : 12820613487 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Find the value of p and q, such that p – q =1. Where, p and q are the zeroes of the polynomial x^2 - 5x – k.

(a) 6

(b) 7

(c) 8

(d) 9

Options :

12820653211. A

12820653212. B

12820653213. C

12820653214. D

Question Number : 86 Question Id : 12820613488 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

We can divide circumference of a circle into

(a) 180 equal arcs

(b) 360 equal arcs

(c) 270 equal arcs

(d) 90 equal arcs

Options :

12820653215. A

12820653216. B

12820653217. C

12820653218. D

Question Number : 87 Question Id : 12820613489 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $Log_4(x) = 12$, then $log_2(x / 4)$ is equal to

(a) 11

(b) 48

(c) -12

(d) 22

Options :

12820653219. A

12820653220. B

12820653221. C

12820653222. D

Question Number : 88 Question Id : 12820613490 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The three solutions of the equation f(x) = 0 are -2, 0, and 3. Therefore, the three solutions of the equation f(x - 2) = 0 are

(a) - 4, -2, and 1

(b) -2, 0 and 3

(c) 4, 2, and 5

(d) 0, 2 and 5

Options :

12820653223. A

12820653224. B

12820653225. C

12820653226. D

Question Number : 89 Question Id : 12820613491 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $Z_1 = -2 + i3$ and $Z_2 = 4 + i3$, then the real part of (Z_1/Z_2) is

(a) 1/35

(b) 1/15

(c) 1/25

(d) 1/20

Options :

12820653227. A

12820653228. B

12820653229. C

12820653230. D

Question Number : 90 Question Id : 12820613492 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The acute angle 'θ' between the lines whose direction ratios are 2, l, -2 and 1, l, 0 is

(a) 30°
(b) 45°
(c) 60°
(d) 90°

Options :

12820653231. A

12820653232. B

12820653233. C

12820653234. D

Question Number : 91 Question Id : 12820613493 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What data structure is used for depth first traversal of a graph?

(a) Queue
(b) List
(c) Stack
(d) Tree

Options :

12820653235. A

12820653236. B

12820653237. C

12820653238. D

Question Number : 92 Question Id : 12820613494 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the worst case time complexity of linear search in an array of size n?

(a) $O(n^2)$
(b) O(n)
(c) O(1)
(d) O(logn)

Options :

12820653239. A

12820653240. B

12820653241. C

12820653242. D

Question Number : 93 Question Id : 12820613495 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following operations is not O(1) for an array of sorted data. You may assume that array elements are distinct.

(a) Find the ith largest element
(b) Delete an element
(c) Find the ith smallest element
(d) Find the median

Options :

12820653243. A

12820653244. B

12820653245. C

12820653246. D

Question Number : 94 Question Id : 12820613496 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT true of deadlock prevention and deadlock avoidance schemes?

(a) In deadlock prevention, the request for resources is always granted if the resulting state is safe
(b) In deadlock avoidance, the request for resources is always granted if the result state is safe
(c) Deadlock avoidance is less restrictive than deadlock prevention
(d) Deadlock avoidance requires knowledge of resource requirements a priori

Options :

12820653247. A

12820653248. B

12820653249. C

12820653250. D

Question Number : 95 Question Id : 12820613497 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the address generated by CPU?

(a) physical address
(b) absolute address
(c) logical address
(d) Both physical and logical address

Options :

12820653251. A

12820653252. B

12820653253. C

12820653254. D

Question Number : 96 Question Id : 12820613498 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider attributes ID, CITY and NAME. Which one of these can be considered as a super key?

(a) NAME

(b) ID

(c) CITY

(d) CITY, ID

Options :

12820653255. A

12820653256. B

12820653257. C

12820653258. D

Question Number : 97 Question Id : 12820613499 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is/are property/properties of a dynamic programming problem?

(a) Optimal substructure

(b) Overlapping subproblems

(c) Greedy approach

(d) Both optimal substructure and overlapping subproblems

Options :

12820653259. A

12820653260. B

12820653261. C

12820653262. D

Question Number : 98 Question Id : 12820613500 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the maximum number of edges in a bipartite graph having 10 vertices?

(a) 24

(b) 21

(c) 25

(d) 16

Options :

12820653263. A

12820653264. B

12820653265. C

12820653266. D

Question Number : 99 Question Id : 12820613501 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following algorithms can be used to most efficiently determine the presence of a cycle in a given graph?

(a) Depth First Search
(b) Breadth First Search
(c) Prim's Minimum Spanning Tree Algorithm
(d) Kruskal's Minimum Spanning Tree Algorithm

Options :

12820653267. A

12820653268. B

12820653269. C

12820653270. D

Question Number : 100 Question Id : 12820613502 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the Breadth First Search of a graph is unique?

(a) When the graph is a Binary Tree
(b) When the graph is a Linked List
(c) When the graph is regular
(d) When the graph is a n-ary Tree

Options :

12820653271. A

12820653272. B

12820653273. C

12820653274. D

Question Number : 101 Question Id : 12820613503 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Key to represent relationship between tables is called

(a) primary key
(b) secondary key
(c) foreign key
(d) super key

Options :

12820653275. A

12820653276. B

12820653277. C

12820653278. D

Question Number : 102 Question Id : 12820613504 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is true about Kruskal and Prim MST algorithms? Assume that Prim is implemented for adjacency list representation using Binary Heap and Kruskal is implemented using union by rank.

(a) Worst case time complexity of both algorithms is same.
(b) Worst case time complexity of Kruskal is better than Prim
(c) Worst case time complexity of Prim is better than Kruskal
(d) Worst case time complexity of both algorithms is O(|V|) where V is the set of vertices.

Options :

12820653279. A

12820653280. B

12820653281. C

12820653282. D

Question Number : 103 Question Id : 12820613505 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

You are to design an algorithm to find a simple path in a graph from given vertex s to given vertex t. That simple path is to contain as few edges as possible. Which of the following will you base your algorithm on?

(a) Depth-first search
(b) Breadth-first search
(c) Dijkstra's algorithm
(d) Kruskal's algorithm

Options :

12820653283. A

12820653284. B

12820653285. C

12820653286. D

Question Number : 104 Question Id : 12820613506 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Define the function T(n) by the following recurrence:

$$T(n) = 3T(n/4) + n^{2.5}$$

What is the easiest method to solve this recurrence asymptotically?

(a) Master Theorem
(b) Evaluate the summation
(c) Recursion tree
(d) Solving numerically

Options :

12820653287. A

12820653288. B

12820653289. C

12820653290. D

Question Number : 105 Question Id : 12820613507 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT an example of dynamic programming approach?

(a) Fibonacci Series

(b) Tower of Hanoi

(c) Knapsack

(d) Finding closest pair of points

Options :

12820653291. A

12820653292. B

12820653293. C

12820653294. D

Question Number : 106 Question Id : 12820613508 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the deadlock avoidance algorithm?

(a) banker's algorithm

(b) round-robin algorithm

(c) elevator algorithm

(d) karn's algorithm

Options :

12820653295. A

12820653296. B

12820653297. C

12820653298. D

Question Number : 107 Question Id : 12820613509 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

To access the services of operating system, the interface is provided by the

(a) System calls

(b) API

(c) Library

(d) Assembly instructions

Options :

12820653299. A

12820653300. B

12820653301. C

12820653302. D

Question Number : 108 Question Id : 12820613510 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a 16 bit computer, number of bytes used to store a float variable in C language is

(a) 8 bytes

(b) 4 bytes

(c) 2 bytes

(d) 6 bytes.

Options :

12820653303. A

12820653304. B

12820653305. C

12820653306. D

Question Number : 109 Question Id : 12820613511 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The equivalent of the number $(101101010010)_2$ in Hexadecimal system is

(a) A53

(b) A52

(c) B52

(d) C62

Options :

12820653307. A

12820653308. B

12820653309. C

12820653310. D

Question Number : 110 Question Id : 12820613512 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following programming languages follows the object oriented programming paradigm?

(a) C

(b) assembly language programming

(c) C++

(d) COBOL

Options :

12820653311. A

12820653312. B

12820653313. C

12820653314. D

Question Number : 111 Question Id : 12820613513 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a collection of different data types

(a) structure

(b) array

(c) string

(d) character

Options :

12820653315. A

12820653316. B

12820653317. C

12820653318. D

Question Number : 112 Question Id : 12820613514 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The conditional operator is

(a) &&

(b) If

(c) <=

(d) ? :

Options :

12820653319. A

12820653320. B

12820653321. C

12820653322. D

Question Number : 113 Question Id : 12820613515 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In hexadecimal system D is equivalent to the number in decimal is

(a) 10

(b) 12

(c) 13

(d) 15

Options :

12820653323. A

12820653324. B

12820653325. C

12820653326. D

Question Number : 114 Question Id : 12820613516 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following Balance Factor is NOT found in an AVL tree?

(a) 0
(b) -2
(c) +1
(d) -1

Options :

12820653327. A

12820653328. B

12820653329. C

12820653330. D

Question Number : 115 Question Id : 12820613517 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following Data Structure is used by Breadth First Search (DFS) technique?

(a) stack
(b) queue
(c) hash table
(d) tree

Options :

12820653331. A

12820653332. B

12820653333. C

12820653334. D

Question Number : 116 Question Id : 12820613518 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Stack uses

(a) last in first out
(b) last in last out
(c) first in last out
(d) first in first out

Options :

12820653335. A

12820653336. B

12820653337. C

12820653338. D

Question Number : 117 Question Id : 12820613519 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Floyd's-Warshall algorithm uses the following approach

(a) divide and conquer
(b) greedy
(c) dynamic programming
(d) backtracking

Options :

12820653339. A

12820653340. B

12820653341. C

12820653342. D

Question Number : 118 Question Id : 12820613520 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For any comparison based sorting technique, minimum time complexity in the average case is

(a) O(n)
(b) O(n2)
(c) O(n log n)
(d) O(log n)

Options :

12820653343. A

12820653344. B

12820653345. C

12820653346. D

Question Number : 119 Question Id : 12820613521 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the correct definition of a minimum spanning tree for a graph?

(a) a tree which connects all the nodes such that the mean of the edge costs is the least.
(b) a tree which connects all the nodes such that the sum of the edge costs is the least.
(c) a tree which connects all the nodes with the minimum number of edges
(d) a tree which connects all the nodes such that the median of the edge costs is the least.

Options :

12820653347. A

12820653348. B

12820653349. C

12820653350. D

Question Number : 120 Question Id : 12820613522 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is NOT correct about a compiler and interpreter ?
(a) a compiler takes an entire program and converts it into object code
(b) an Interpreter directly executes instructions line by line
(c) a compiler directly executes instructions line by line
(d) an interpreter does not convert a program into machine code

Options :

12820653351. A

12820653352. B

12820653353. C

12820653354. D

Question Number : 121 Question Id : 12820613523 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the infix notation of an expression is A + (B * C) - (D / E), what would be the postfix equivalent?
(a) ABC*+DE/-
(b) ABC +*DE/-
(c) ABC*+DE-/
(d) ABC*+ED/-

Options :

12820653355. A

12820653356. B

12820653357. C

12820653358. D

Question Number : 122 Question Id : 12820613524 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

First In First Out (FIFO) is implemented in
(a) stack
(b) queue
(c) both stack and queue
(d) neither in stack nor in queue

Options :

12820653359. A

12820653360. B

12820653361. C

12820653362. D

Question Number : 123 Question Id : 12820613525 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A special high-speed internal storage within the CPU which can store instruction, data or address for processor use is known as

(a) random access memory

(b) register

(c) hard disk

(d) memory card

Options :

12820653363. A

12820653364. B

12820653365. C

12820653366. D

Question Number : 124 Question Id : 12820613526 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Adding two binary numbers '100101' and '10101' in a binary form, the result is

(a) 111010

(b) 101010

(c) 110101

(d) 100101

Options :

12820653367. A

12820653368. B

12820653369. C

12820653370. D

Question Number : 125 Question Id : 12820613527 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a technique used to reduce redundancy in a database management system

(a) selection

(b) reduction

(c) normalization

(d) projection

Options :

12820653371. A

12820653372. B

12820653373. C

12820653374. D

Question Number : 126 Question Id : 12820613528 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An absolute path for a filename or a directory name in Linux starts with the
(a) home directory
(b) current directory other than the root directory
(c) root directory
(d) symbol '..'

Options :

12820653375. A

12820653376. B

12820653377. C

12820653378. D

Question Number : 127 Question Id : 12820613529 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following interface is used to access the services of operating system
(a) API
(b) library
(c) assembly instructions
(d) system calls

Options :

12820653379. A

12820653380. B

12820653381. C

12820653382. D

Question Number : 128 Question Id : 12820613530 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Strassen's Matrix Multiplication belongs to which class of algorithms?
(a) dynamic programming
(b) backtracking
(c) divide and conquer
(d) greedy

Options :

12820653383. A

12820653384. B

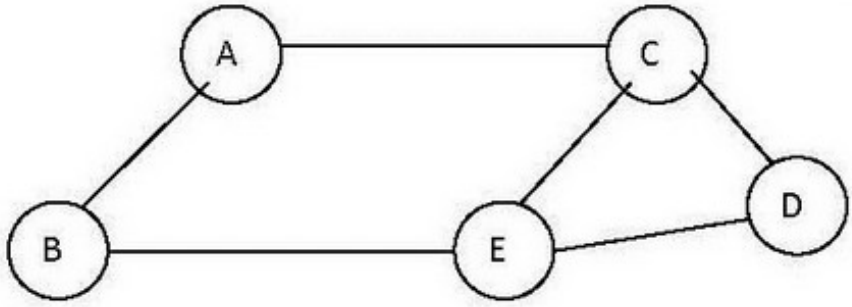
12820653385. C

12820653386. D

Question Number : 129 Question Id : 12820613531 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the chromatic number of the following graph?



(a) 4
(b) 3
(c) 5
(d) 2

Options :

12820653387. A

12820653388. B

12820653389. C

12820653390. D

Question Number : 130 Question Id : 12820613532 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In order to get the original tree from a sequence, which of the following is needed

(a) only pre-order sequence
(b) only post-order sequence
(c) both pre-order and post-order sequence
(d) both pre-order and in-order sequence

Options :

12820653391. A

12820653392. B

12820653393. C

12820653394. D