

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

1 Vitamin B₁ can be assayed by _____.
Vitamin B₁ can be assayed by _____.

A: Spectrofluorimetry
Spectrofluorimetry

B: Turbidometry
Turbidometry

C: Calorimetry
Calorimetry

D: Gravimetry
Gravimetry

Correct Alternative :- A

2 The greatest disadvantage of Scintillation Counting is _____.
The greatest disadvantage of Scintillation Counting is _____.

A: quenching
quenching

B: corrosion
corrosion

C: transformation
transformation

D: collision
Collision

Correct Alternative :- A

3 Bacterial components such as endospores and inclusion bodies containing poly β -hydroxy butyrate can be detected by _____.
Bacterial components such as endospores and inclusion bodies containing poly β -hydroxy butyrate can be detected by _____.

A: Dark Field Microscopy
Dark Field Microscopy

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

B: Phase Contrast Microscope
Phase Contrast Microscope

C: Fluorescence Microscope
Fluorescence Microscope

D: Polarised Microscope
Polarised Microscope

Correct Alternative :- B

4 The requirement of Vitamin E increases with the intake of :
The requirement of Vitamin E increases with the intake of :

A: Polyunsaturated fatty acids
Polyunsaturated fatty acids

B: Saturated fatty acids
Saturated fatty acids

C: Complex carbohydrates
Complex carbohydrates

D: Soluble proteins
Soluble proteins

Correct Alternative :- A

5 The tripeptide present in human red blood cells with potent antioxidant activity is :
The tripeptide present in human red blood cells with potent antioxidant activity is :

A: glutathione
glutathione

B: ankyrin
ankyrin

C: bradykinin
bradykinin

D: plasmin
Plasmin

Correct Alternative :- A

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

6 The amino acid with non- α -amino group play important role in mammalian metabolism is :
The amino acid with non- α -amino group play important role in mammalian metabolism is :

A: Ornithine

Ornithine

B: Taurine

Taurine

C: Citrulline

Citrulline

D: Betain

Betain

Correct Alternative :- B

7 Iduronic acid is not a component of :
Iduronic acid is not a component of :

A: Chondroitin Sulphate - A

Chondroitin Sulphate - A

B: Dermutan Sulphate

Dermutan Sulphate

C: Heparan Sulphate

Heparan Sulphate

D: Heparin

Heparin

Correct Alternative :- A

8 Which of the following enzyme catalyses the phosphorylation of substrate with the use of inorganic phosphorus ?
Which of the following enzyme catalyses the phosphorylation of substrate with the use of inorganic phosphorus ?

A: Hexokinase

Hexokinase

B: Phospho fructo kinase

Phospho fructo kinase

C: Glyceraldehyde - 3 - phosphate dehydrogenase

Glyceraldehyde - 3 - phosphate dehydrogenase

D: Phospho glycerol mutase

Phospho glycerol mutase

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- C

9 Mitochondrial matrix brought to equilibrium by incubation with 0.1 M Potassium Chloride at pH 9, when resuspended in a buffer of pH 7 with valinomycin results in _____ under laboratory conditions in the presence of ADP and inorganic phosphorous.

Mitochondrial matrix brought to equilibrium by incubation with 0.1 M Potassium Chloride at pH 9, when resuspended in a buffer of pH 7 with valinomycin results in _____ under laboratory conditions in the presence of ADP and inorganic phosphorous.

- A: formation of ATP
formation of ATP
- B: interruption of electron flow
interruption of electron flow
- C: prevention of phosphorylation of ADP to ATP
prevention of phosphorylation of ADP to ATP
- D: Inhibition of both electron flow and phosphorylation
Inhibition of both electron flow and phosphorylation

Correct Alternative :- A

10 The group transfer potential of phosphocreatine is :
The group transfer potential of phosphocreatine is :

- A: 24.2 kcal/mol
24.2 kcal/mol
- B: 23.3 kcal/mol
23.3 kcal/mol
- C: 212.8 kcal/mol
212.8 kcal/mol
- D: 210.5 kcal/mol
210.5 kcal/mol

Correct Alternative :- D

11 An individual develops haemolytic anaemia after the intake of anti-malarial drug and this reaction is likely due to :
An individual develops haemolytic anaemia after the intake of anti-malarial drug and this reaction is likely due to :

- A: Glucose 6-phosphate dehydrogenase deficiency
Glucose 6-phosphate dehydrogenase deficiency
- B: Glycogen phosphorylase deficiency

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Glycogen phosphorylase deficiency

C: Diabetes Mellitus

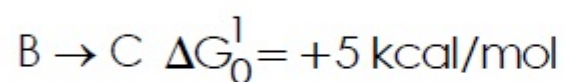
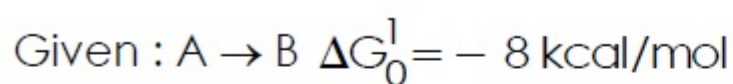
Diabetes Mellitus

D: Scurvy

Scurvy

Correct Alternative :- A

12



Find the standard free energy change for the overall reaction $A \rightarrow C$

A: 213 kcal/mol

213 kcal/mol

B: 240 kcal/mol

240 kcal/mol

C: 23 kcal/mol

23 kcal/mol

D: 13 kcal/mol

13 kcal/mol

Correct Alternative :- C

13

Most of the water soluble B complex Vitamins act as _____.

Most of the water soluble B complex Vitamins act as _____.

A: enzymes

enzymes

B: coenzymes

coenzymes

C: co-factors

co-factors

D: activation

Activation

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- B

14 _____ marker enzyme inner membrane of mitochondria.
_____ marker enzyme inner membrane of mitochondria.

- A: Cytochrome C-oxidase
Cytochrome C-oxidase
- B: Hexokinase
Hexokinase
- C: Aryl Sulphatase
Aryl Sulphatase
- D: Glutamate Dehydrogenase
Glutamate Dehydrogenase

Correct Alternative :- A

15 In competitive inhibition V_{max} is unaffected but _____ is increased.
In competitive inhibition V_{max} is unaffected but _____ is increased.

- A: apparent K_m
apparent K_m
- B: K_s
 K_s
- C: S
S
- D: $-\frac{I}{K_m}$

Correct Alternative :- A

16 Choose the statement which is not correct.
Choose the statement which is not correct.

- A: Gluco corticoids are insulin agonists.
Gluco corticoids are insulin agonists.
- B: Glucokinase is important in regulating blood glucose level after a meal.

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Glucokinase is important in regulating blood glucose level after a meal.

C: Insulin increases glucose tolerance in diabetic patients.

Insulin increases glucose tolerance in diabetic patients.

D: Fructose 1 - 6 biphosphatase deficiency causes lactic acidosis.

Fructose 1 - 6 biphosphatase deficiency causes lactic acidosis.

Correct Alternative :- A

17

In the homozygous individuals there is near absence of HDL and accumulation of cholesteryl esters in tissues. This clinical condition is known as :

In the homozygous individuals there is near absence of HDL and accumulation of cholesteryl esters in tissues. This clinical condition is known as :

A: Tangier's disease

Tangier's disease

B: Abeta lipoproteinemia

Abeta lipoproteinemia

C: Hypobeta lipoproteinemia

Hypobeta lipoproteinemia

D: Hypo lipoproteinemia

Hypo lipoproteinemia

Correct Alternative :- A

18

The normal level of creatinine clearance in male individuals given for reference is :

The normal level of creatinine clearance in male individuals given for reference is :

A: 105 6 10 ml/min

105 6 10 ml/min

B: 10 6 2 ml/min

10 6 2 ml/min

C: 50 6 5 ml/min

50 6 5 ml/min

D: 200 6 20 ml/min

200 6 20 ml/min

Correct Alternative :- A

19

Factor VIII related bleeding disorder is known as :

Factor VIII related bleeding disorder is known as :

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- A: Haemophilia B
Haemophilia B
- B: Haemophilia C
Haemophilia C
- C: Haemophilia A
Haemophilia A
- D: Haemo chromatosis
Haemo chromatosis

Correct Alternative :- C

20

A researcher made an interesting observation about a protein made by the rough endoplasmic reticulum (ER) and eventually used to build a cell's plasma membrane. The protein in the membrane was slightly different from the protein made in ER. The protein was probably changed in :

A researcher made an interesting observation about a protein made by the rough endoplasmic reticulum (ER) and eventually used to build a cell's plasma membrane. The protein in the membrane was slightly different from the protein made in ER. The protein was probably changed in :

- A: golgi apparatus
golgi apparatus
- B: smooth ER
smooth ER
- C: mitochondria
mitochondria
- D: nucleus
nucleus

Correct Alternative :- A

21

Which of the following statement is false with respect to the action of thyroid hormone ?

Which of the following statement is false with respect to the action of thyroid hormone ?

- A: Increase pentose phosphate pathway
Increase pentose phosphate pathway
- B: Increase glycogenolysis
Increase glycogenolysis
- C: Increase glycolysis
Increase glycolysis
- D: Decrease gluconeogenesis

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Decrease gluconeogenesis

Correct Alternative :- D

22 The first penicillin isolated by Alexander Fleming, Penicillin F is also called :
The first penicillin isolated by Alexander Fleming, Penicillin F is also called :

- A: 2-pentenyl penicillin
2-pentenyl penicillin
- B: n-heptyl penicillin
n-heptyl penicillin
- C: phenoxymethyl penicillin
phenoxymethyl penicillin
- D: benzyl penicillin
benzyl penicillin

Correct Alternative :- A

23 Which of the following Ascomycetes are used for riboflavin production ?
Which of the following Ascomycetes are used for riboflavin production ?

- A: Candida guilliermondia
Candida guilliermondia
- B: Candida flareri
Candida flareri
- C: Ashbya gossypii
Ashbya gossypii
- D: Clostridium butylicum
Clostridium butylicum

Correct Alternative :- C

24 Which of the following is also called sac fungi ?
Which of the following is also called sac fungi ?

- A: Zygomycota
Zygomycota
- B: Ascomycota
Ascomycota

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

C: Basidiomycota

Basidiomycota

D: Deuteromycota

Deuteromycota

Correct Alternative :- B

25

DNA sequencing by Sanger's method involves the use of :

DNA sequencing by Sanger's method involves the use of :

A: Ribonucleotide

Ribonucleotide

B: 3'-deoxyribonucleotide

3'-deoxyribonucleotide

C: 2', 3'-dideoxyribonucleotide

2', 3'-dideoxyribonucleotide

D: Fluorodinitrobenzene

Fluorodinitrobenzene

Correct Alternative :- C

26

_____ is used for the detection and quantification of mRNA expression.

_____ is used for the detection and quantification of mRNA expression.

A: Multiple PCR

Multiple PCR

B: Nested PCR

Nested PCR

C: RT - PCR

RT - PCR

D: Real time PCR

Real time PCR

Correct Alternative :- C

27

Lysosomes function to :

Lysosomes function to :

A: Synthesize various cellular macromolecules

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Synthesize various cellular macromolecules

B: Carry out digestion of all cytosolic components

Carry out digestion of all cytosolic components

C: Ingest material from the extracellular environment

Ingest material from the extracellular environment

D: Recycle cellular material and digest material taken in from the environment

Recycle cellular material and digest material taken in from the environment

Correct Alternative :- B

28

The peptidyl transferase activity resides in :

The peptidyl transferase activity resides in :

A: 18 S rRNA

18 S rRNA

B: 5 S rRNA

5 S rRNA

C: 16 S rRNA

16 S rRNA

D: 23 S rRNA

23 S rRNA

Correct Alternative :- D

29

The antigenic determinants are in the hidden state in :

The antigenic determinants are in the hidden state in :

A: Neoantigens

Neoantigens

B: Alloantigens

Alloantigens

C: Isoantigens

Isoantigens

D: Cryptantigens

Cryptantigens

Correct Alternative :- D

30

The part of an immunoglobulin which allows the two Fab arms to open and close to accommodate binding of two antigenic

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

determinants is :

The part of an immunoglobulin which allows the two Fab arms to open and close to accommodate binding of two antigenic determinants is :

- A: Hinge region
Hinge region
- B: Hyper variable region
Hyper variable region
- C: Frame work region
Frame work region
- D: FC region
FC region

Correct Alternative :- A

31

The antibodies present on the surface of matured B cells are :
The antibodies present on the surface of matured B cells are :

- A: IgD and IgM
IgD and IgM
- B: IgG and IgM
IgG and IgM
- C: IgE and IgG
IgE and IgG
- D: IgE and IgA
IgE and IgA

Correct Alternative :- A

32

During T - helper cell activation, antigen presenting macrophage secrete the signalling molecule :
During T - helper cell activation, antigen presenting macrophage secrete the signalling molecule :

- A: IL - 1
IL - 1
- B: IL - 2
IL - 2
- C: IL - 6
IL - 6
- D: IL - 4
IL - 4

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- A

33 The natural antibodies which induce antigen-antibody reactions in human red blood cells belong to the type of :
The natural antibodies which induce antigen-antibody reactions in human red blood cells belong to the type of :

- A: IgM and IgG
IgM and IgG
- B: IgG and IgE
IgG and IgE
- C: IgD and IgA
IgD and IgA
- D: IgA and IgE
IgA and IgE

Correct Alternative :- A

34 The production of adventitious root, shoot and flowers from cells of tissue culture is termed :
The production of adventitious root, shoot and flowers from cells of tissue culture is termed :

- A: Organogenesis
Organogenesis
- B: Micropropagation
Micropropagation
- C: Callus culture
Callus culture
- D: Suspension culture
Suspension culture

Correct Alternative :- A

35 Which of the following is not correct in predicting ovulation time?
Which of the following is not correct in predicting ovulation time?

- A: Plasma progesterone concentration
Plasma progesterone concentration
- B: Administration of clomiphene
Administration of clomiphene
- C: Assay of LH in urine

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Assay of LH in urine

- D: Changes in the level of 17β estradiol
Changes in the level of 17β estradiol

Correct Alternative :- D

36

The following conditions in cell culture promote cell differentiation.

- (a) high serum
 - (b) high growth factor
 - (c) low cell density
 - (d) low serum
 - (e) high cell density
 - (f) appropriate hormone
- Select the suitable condition.

The following conditions in cell culture promote cell differentiation.

- (a) high serum
 - (b) high growth factor
 - (c) low cell density
 - (d) low serum
 - (e) high cell density
 - (f) appropriate hormone
- Select the suitable condition.

A: (d), (e) and (f)

(d), (e) and (f)

B: (a), (b) and (c)

(a), (b) and (c)

C: (a), (e) and (f)

(a), (e) and (f)

D: (d), (b) and (c)

(d), (b) and (c)

Correct Alternative :- A

37

The resolution limit of electron microscopy is _____.

The resolution limit of electron microscopy is _____.

A: $0.2\ \mu\text{m}$

$0.2\ \mu\text{m}$

B: $0.5\ \mu\text{m}$

$0.5\ \mu\text{m}$

C: 1 nm

1 nm

D: 0.1 nm

0.1 nm

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- C

38

The sensitivity of fluorescence detector in HPLC is :
The sensitivity of fluorescence detector in HPLC is :

- A: $10^{29} \text{ g cm}^{22}$
 $10^{29} \text{ g cm}^{22}$
B: $10^{220} \text{ mg cm}^{23}$
 $10^{220} \text{ mg cm}^{23}$
C: $10^{212} \text{ mg cm}^{23}$
 $10^{212} \text{ mg cm}^{23}$
D: $10^{212} \text{ g cm}^{23}$
 $10^{212} \text{ g cm}^{23}$

Correct Alternative :- D

39

Ultracentrifugation can characterize biological molecules with particle concentrations of :
Ultracentrifugation can characterize biological molecules with particle concentrations of :

- A: 1 - 10 mg dm^{23}
1 - 10 mg dm^{23}
B: 0.01 - 1 mg dm^{23}
0.01 - 1 mg dm^{23}
C: 0.1 - 1 g dm^{23}
0.1 - 1 g dm^{23}
D: 0.01 - 1 g dm^{23}
0.01 - 1 g dm^{23}

Correct Alternative :- D

40

The fluorophore, tetramethylrhodamine in fluorescence microscopy has an emission maximum at :
The fluorophore, tetramethylrhodamine in fluorescence microscopy has an emission maximum at :

- A: 554 nm
554 nm
B: 576 nm
576 nm
C: 592 nm

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

592 nm

D: 652 nm

652 nm

Correct Alternative :- B

41 High-resolution spectra of NMR can be obtained by spinning the solid sample at :
High-resolution spectra of NMR can be obtained by spinning the solid sample at :

A: 54.78

54.78

B: 35.78

35.78

C: 180.38

180.38

D: 60.58

60.58

Correct Alternative :- A

42 The common anomer of D-fructose is :
The common anomer of D-fructose is :

A: L-Fructose

L-Fructose

B: β -D-fructofuranose

β -D-fructofuranose

C: β -L-fructofuranose

β -L-fructofuranose

D: D-sorbose

D-sorbose

Correct Alternative :- B

43 The one letter code for amino acids was devised by :
The one letter code for amino acids was devised by :

A: Edman

Edman

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

B: Sanger

Sanger

C: Merrifield

Merrifield

D: Dayhoff

Dayhoff

Correct Alternative :- D

44

N6-methyladenosine is normally present in :

N6-methyladenosine is normally present in :

A: DNA of animals

DNA of animals

B: DNA of bacteria

DNA of bacteria

C: DNA of plants

DNA of plants

D: DNA of bacteria and bacteriophages

DNA of bacteria and bacteriophages

Correct Alternative :- B

45

All of the following are features of 2, 3 - BPG except :

All of the following are features of 2, 3 - BPG except :

A: BPG stabilizes oxygenated form.

BPG stabilizes oxygenated form.

B: Formed from glycolytic intermediate.

Formed from glycolytic intermediate.

C: One molecule of BPG is bound per tetramer of hemoglobin.

One molecule of BPG is bound per tetramer of hemoglobin.

D: BPG forms salt bridges between its oxygen atoms and both beta chains.

BPG forms salt bridges between its oxygen atoms and both beta chains.

Correct Alternative :- A

46

Carbamoyl phosphate synthase II function in :

Carbamoyl phosphate synthase II function in :

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- A: pyrimidine biosynthesis
pyrimidine biosynthesis
- B: urea synthesis
urea synthesis
- C: purine biosynthesis
purine biosynthesis
- D: uric acid biosynthesis
uric acid biosynthesis

Correct Alternative :- A

47 Dehydratases are major subclass of which one of the following enzyme classes ?
Dehydratases are major subclass of which one of the following enzyme classes ?

- A: Isomerases
Isomerases
- B: Hydrolases
Hydrolases
- C: Lyases
Lyases
- D: Oxidoreductases
Oxidoreductases

Correct Alternative :- C

48 Pick out the non-lipid cardiac risk factors from the following pair of markers.
Pick out the non-lipid cardiac risk factors from the following pair of markers.

- A: Homocysteine and Homoserine
Homocysteine and Homoserine
- B: Homocysteine and Creatinine
Homocysteine and Creatinine
- C: CRP and Homoserine
CRP and Homoserine
- D: CRP and Homocysteine
CRP and Homocysteine

Correct Alternative :- D

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

49 Which of the following protein oxidizes ferrous iron to ferric ion at the intestinal abluminal membrane ?
Which of the following protein oxidizes ferrous iron to ferric ion at the intestinal abluminal membrane ?

- A: Ferroportin
Ferroportin
- B: Hephaestin
Hephaestin
- C: Ceruloplasmin
Ceruloplasmin
- D: Transferrin
Transferrin

Correct Alternative :- B

50 Which of the following vitamin has been used to increase HDL cholesterol level in the blood ?
Which of the following vitamin has been used to increase HDL cholesterol level in the blood ?

- A: Vitamin B₁
Vitamin B₁
- B: Vitamin B₃
Vitamin B₃
- C: Vitamin B₆
Vitamin B₆
- D: Vitamin B₁₂
Vitamin B₁₂

Correct Alternative :- B

51 Most of the Bilirubin excreted in bile is in the form of :
Most of the Bilirubin excreted in bile is in the form of :

- A: Bilirubin monoglucuronide
Bilirubin monoglucuronide
- B: Biliverdin monoglucuronide
Biliverdin monoglucuronide
- C: Biliverdin diglucuronide
Biliverdin diglucuronide
- D: Bilirubin diglucuronide

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Bilirubin diglucuronide

Correct Alternative :- D

52 _____ is due to defect in uptake of Bilirubin by liver parenchymal cells.
_____ is due to defect in uptake of Bilirubin by liver parenchymal cells.

- A: Crigler Najjar syndrome
Crigler Najjar syndrome
- B: Dubin Johnson syndrome
Dubin Johnson syndrome
- C: Gilbert's disease
Gilbert's disease
- D: Rotor syndrome
Rotor syndrome

Correct Alternative :- C

53 Defect in the LDL receptor gene causes :
Defect in the LDL receptor gene causes :

- A: Familial combined Hyperlipidemia
Familial combined Hyperlipidemia
- B: Familial Hypertriglyceridemia
Familial Hypertriglyceridemia
- C: Hyper chylomicronemia
Hyper chylomicronemia
- D: Familial Hyper cholesterolemia
Familial Hyper cholesterolemia

Correct Alternative :- D

54 Which of the following amino acids would most likely be found in a membrane-spanning a helix :
Which of the following amino acids would most likely be found in a membrane-spanning a helix :

- A: Lysine
Lysine
- B: Glutamine
Glutamine

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

C: Alanine

Alanine

D: Arginine

Arginine

Correct Alternative :- C

55 Which of the following bacterial types belong to Legionellaceae family ?
Which of the following bacterial types belong to Legionellaceae family ?

A: Facultatively anaerobic Gram negative rods.

Facultatively anaerobic Gram negative rods.

B: Anaerobic Gram negative, straight, curved and helical rods.

Anaerobic Gram negative, straight, curved and helical rods.

C: Gram negative Aerobic rods and Cocci.

Gram negative Aerobic rods and Cocci.

D: Anaerobic Gram negative Cocci.

Anaerobic Gram negative Cocci.

Correct Alternative :- C

56 Which of the following microorganism yields highest vitamin B₁₂ ?
Which of the following microorganism yields highest vitamin B₁₂ ?

A: Pseudomonas denitrificians

Pseudomonas denitrificians

B: Streptomyces olivaceus

Streptomyces olivaceus

C: Propionibacterium shermanii

Propionibacterium shermanii

D: Bacillus megaterium

Bacillus megaterium

Correct Alternative :- A

57 In which of the following settling process during primary treatment of water, the concentration of particles increases from top to bottom and resulting in the thickening of sludge :
In which of the following settling process during primary treatment of water, the concentration of particles increases from top to bottom and resulting in the thickening of sludge :

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

A: Flocculant sludge

Flocculant sludge

B: Discrete settling

Discrete settling

C: Compression settling

Compression settling

D: Hindered settling

Hindered settling

Correct Alternative :- D

58

Fungi prefer to grow in which of the following pH of the soil ?

Fungi prefer to grow in which of the following pH of the soil ?

A: 5 to 6

5 to 6

B: 7 to 8

7 to 8

C: Below 6

Below 6

D: Above 8

Above 8

Correct Alternative :- A

59

DNA glycosylases are involved in which one of the following types of DNA repair system ?

DNA glycosylases are involved in which one of the following types of DNA repair system ?

A: mismatch repair

mismatch repair

B: nucleotide-excision repair

nucleotide-excision repair

C: base-excision repair

base-excision repair

D: direct repair

direct repair

Correct Alternative :- C

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

60 The antigen independent maturation of B cells in the bone marrow produces which of the following antibodies ?
The antigen independent maturation of B cells in the bone marrow produces which of the following antibodies ?

A: IgG and IgA

IgG and IgA

B: IgM and IgE

IgM and IgE

C: IgM and IgD

IgM and IgD

D: IgA and IgD

IgA and IgD

Correct Alternative :- C

61 In RIA, antigen is generally labelled with _____.
In RIA, antigen is generally labelled with _____.

A: Gamma emitting isotopes only

Gamma emitting isotopes only

B: Beta emitting isotopes only

Beta emitting isotopes only

C: Both Gamma and Beta emitting isotopes are used

Both Gamma and Beta emitting isotopes are used

D: Both Gamma and Beta emitting isotopes are not used

Both Gamma and Beta emitting isotopes are not used

Correct Alternative :- C

62 Indicate which of the following statement is false.
Indicate which of the following statement is false.

A: Presence of HLA B27 allele is diagnostic for ankylosis spondylitis.

Presence of HLA B27 allele is diagnostic for ankylosis spondylitis.

B: TH1 cells are not involved in the development of autoimmunity.

TH1 cells are not involved in the development of autoimmunity.

C: TH2 cells appear to block development of autoimmune disease.

TH2 cells appear to block development of autoimmune disease.

D: Inappropriate Class-II MHC expression on cells may induce autoimmunity.

Inappropriate Class-II MHC expression on cells may induce autoimmunity.

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- B

63 Which of the following statement is false with respect to antibody isotype switching ?
Which of the following statement is false with respect to antibody isotype switching ?

- A: Does not affect antigen specificity of antibody.
Does not affect antigen specificity of antibody.
- B: Does affect antigen specificity.
Does affect antigen specificity.
- C: Retains antigen affinity.
Retains antigen affinity.
- D: Allows interaction with effector molecule.
Allows interaction with effector molecule.

Correct Alternative :- B

64 When plated in nutrient medium how much time is required for the protoplast to synthesize new cell wall ?
When plated in nutrient medium how much time is required for the protoplast to synthesize new cell wall ?

- A: 5-10 days
5-10 days
- B: 10-15 days
10-15 days
- C: 15-17 days
15-17 days
- D: 2-5 days
2-5 days

Correct Alternative :- D

65 Which of these established cell lines originate from a mouse embryo ?
Which of these established cell lines originate from a mouse embryo ?

- A: BHK
BHK
- B: HeLa
HeLa
- C: Hep-2
Hep-2

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

D: 3T3 A
3T3 A

Correct Alternative :- D

66

The repeating unit of starch is :
The repeating unit of starch is :

A: Maltose
Maltose
B: Cellobiose
Cellobiose
C: Glucose
Glucose
D: Cellulose
Cellulose

Correct Alternative :- A

67

Reverse Phase partition HPLC is particularly useful for separation of _____ compounds.
Reverse Phase partition HPLC is particularly useful for separation of _____ compounds.

A: Polar
Polar
B: Non Polar
Non Polar
C: Neutral
Neutral
D: Quaternary
Quaternary

Correct Alternative :- A

68

Which sub-unit of the trimeric G-protein acts as GTPase switch ?
Which sub-unit of the trimeric G-protein acts as GTPase switch ?

A: Alpha
Alpha
B: Beta

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Beta

C: Gamma

Gamma

D: Beta-gamma

Beta-gamma

Correct Alternative :- A

69 Teichoic acid contains alternating residues of D alanine and _____.
Teichoic acid contains alternating residues of D alanine and _____.

A: Glucosamine

Glucosamine

B: N-acetyl glucosamine

N-acetyl glucosamine

C: Galactosamine

Galactosamine

D: N-acetyl galactosamine

N-acetyl galactosamine

Correct Alternative :- B

70 The Induced fit model of enzyme action was proposed by _____.
The Induced fit model of enzyme action was proposed by _____.

A: Fischer

Fischer

B: Khoshland

Khoshland

C: Sanger

Sanger

D: Paul

Paul

Correct Alternative :- B

71 The term facultative anaerobic organisms refers to those that :
The term facultative anaerobic organisms refers to those that :

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- A: does not use oxygen but tolerate it
does not use oxygen but tolerate it
- B: is killed by oxygen
is killed by oxygen
- C: use oxygen when present or even grows without oxygen when absent
use oxygen when present or even grows without oxygen when absent
- D: requires less oxygen than is present in air
requires less oxygen than is present in air

Correct Alternative :- C

72

Secondary Sewage treatment is mainly a :
Secondary Sewage treatment is mainly a :

- A: Biological process
Biological process
- B: Mechanical process
Mechanical process
- C: Physical process
Physical process
- D: Chemical process
Chemical process

Correct Alternative :- A

73

Which of these plant growth regulators determines callus development ?
Which of these plant growth regulators determines callus development ?

- A: auxin and cytokinin
auxin and cytokinin
- B: auxin and ethylene
auxin and ethylene
- C: auxin and abscisic acid
auxin and abscisic acid
- D: cytokinins and giberellins
cytokinins and gibberellins

Correct Alternative :- A

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

74

_____ multiply by budding.
_____ multiply by budding.

- A: Fungi
Fungi
- B: Viruses
Viruses
- C: Yeast
Yeast
- D: Actinomycetes
Actinomycetes

Correct Alternative :- C

75

Which of the following enables a cell to pick-up and concentrate a specific kind of molecule ?
Which of the following enables a cell to pick-up and concentrate a specific kind of molecule ?

- A: Passive transport
Passive transport
- B: Diffusion
Diffusion
- C: Osmosis
Osmosis
- D: Receptor mediated endocytosis
Receptor mediated endocytosis

Correct Alternative :- D

76

DNA segments are analysed by :
DNA segments are analysed by :

- A: Northern Blotting
Northern Blotting
- B: Southern Blotting
Southern Blotting
- C: Polymerase Chain Reaction
Polymerase Chain Reaction
- D: Western Blotting
Western Blotting

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- B

77

The most common indicator in animal cell culture medium is :
The most common indicator in animal cell culture medium is :

- A: rose bengal
rose bengal
- B: bromocresol purple
bromocresol purple
- C: phenol red
phenol red
- D: crimson orange
crimson orange

Correct Alternative :- C

78

The light chains of IgS are :
The light chains of IgS are :

- A: Either kappa or lambda type
Either kappa or lambda type
- B: kappa and lambda types in the ratio of 1:1
kappa and lambda types in the ratio of 1:1
- C: a mixture of kappa and lambda types in the ratio of 2:1
a mixture of kappa and lambda types in the ratio of 2:1
- D: made up of only lambda chains
made up of only lambda chains

Correct Alternative :- A

79

In eukaryotes, the RNA capped in 5' terminus is :
In eukaryotes, the RNA capped in 5' terminus is :

- A: tRNA
tRNA
- B: mRNA
mRNA
- C: rRNA
rRNA

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

D: hnRNA
hnRNA

Correct Alternative :- B

80 Error free repair of double strand breaks in DNA is accomplished by :
Error free repair of double strand breaks in DNA is accomplished by :

A: Non-homologous end joining
Non-homologous end joining

B: Base excision repair
Base excision repair

C: Homologous recombination
Homologous recombination

D: Both Non-homologous end joining and Homologus recombination
Both Non-homologous end joining and Homologus recombination

Correct Alternative :- D

81 The region for estimating protein by Circular Dichroism is _____.
The region for estimating protein by Circular Dichroism is _____.

A: 400 nm
400 nm

B: 200 nm
200 nm

C: 700 nm
700 nm

D: 500 nm
500 nm

Correct Alternative :- B

82 The standard redox potential of few oxidants are given below. Choose their sequence of arrangement in the inner mitochondrial membrane for electron flow.
 $P = +0.82$, $Q = +0.22$, $R = -0.32$, $S = +0.10$
The standard redox potential of few oxidants are given below. Choose their sequence of arrangement in the inner mitochondrial membrane for electron flow.
 $P = +0.82$, $Q = +0.22$, $R = -0.32$, $S = +0.10$

A: PQRS

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- PQRS
B: PRQS
PRQS
C: SRQP
SRQP
D: RSQP
RSQP

Correct Alternative :- D

83 _____ are the two enzymes that are useful as diagnostic indicator of skeletal muscle disorders.
_____ are the two enzymes that are useful as diagnostic indicator of skeletal muscle disorders.

- A: Creatine kinase; fructose bisphosphate aldolase
Creatine kinase; fructose bisphosphate aldolase
B: Hexokinase; Glucose 6' phosphatase
Hexokinase; Glucose 6' phosphatase
C: α amylase; creatine kinase
 α amylase; creatine kinase
D: Glucokinase; hexokinase
Glucokinase; hexokinase

Correct Alternative :- A

84 Some aminoacids which destabilize α -helix of protiens are :
Some aminoacids which destabilize α -helix of protiens are :

- A: Ala, His, Val
Ala, His, Val
B: Met, Tyr, Try
Met, Tyr, Try
C: Ser, Thr, Lys
Ser, Thr, Lys
D: Gln, Asn, Cys
Gln, Asn, Cys

Correct Alternative :- C

85 Lactate Dehydrogenase is a _____.

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Lactate Dehydrogenase is a _____.

- A: Trimer
Trimer
- B: Tetramer
Tetramer
- C: Dimer
Dimer
- D: Pentamer
Pentamer

Correct Alternative :- B

86

Artificial seeds are :
Artificial seeds are :

- A: Seeds produced in laboratory condition.
Seeds produced in laboratory condition.
- B: Somatic embryo encapsulated in a gel.
Somatic embryo encapsulated in a gel.
- C: Seeds encapsulated in a gel.
Seeds encapsulated in a gel.
- D: Zygotic embryo encapsulated in a gel.
Zygotic embryo encapsulated in a gel.

Correct Alternative :- B

87

Urinary excretion of Bence-jones protein is common in patients with :
Urinary excretion of Bence-jones protein is common in patients with :

- A: Pheochromocytoma
Pheochromocytoma
- B: multiple myeloma
multiple myeloma
- C: kidney bladder cancer
kidney bladder cancer
- D: hypo albuminemia
hypo albuminemia

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- B

88 Inherited absence of bilirubin UDP-glucuronyl transferase in hepatic tissue leads to the clinical condition in which serum bilirubin usually exceeds 20 mg/dl is :
Inherited absence of bilirubin UDP-glucuronyl transferase in hepatic tissue leads to the clinical condition in which serum bilirubin usually exceeds 20 mg/dl is :

- A: Crigler-Najjar syndrome- Type I
Crigler-Najjar syndrome- Type I
- B: Crigler - Najjar syndrome - Type II
Crigler - Najjar syndrome - Type II
- C: Gilbert's disease
Gilbert's disease
- D: Dubin-Johnson syndrome
Dubin-Johnson syndrome

Correct Alternative :- A

89 Which of the following steps in protein synthesis in prokaryotes is false ?
Which of the following steps in protein synthesis in prokaryotes is false ?

- A: Binding of tRNA to a 30S particle
Binding of tRNA to a 30S particle
- B: Binding of tRNA to a 70S particle
Binding of tRNA to a 70S particle
- C: Coupling of an amino acid to ribosome by an amino acyl synthetase
Coupling of an amino acid to ribosome by an amino acyl synthetase
- D: Separation of the 70S ribosomes to form 30S and 50S particles
Separation of the 70S ribosomes to form 30S and 50S particles

Correct Alternative :- C

90 Immunological precipitation reaction takes place when homologous antibodies are made to react with :
Immunological precipitation reaction takes place when homologous antibodies are made to react with :

- A: Insoluble antigens
Insoluble antigens
- B: Soluble antigens
Soluble antigens

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

C: Carriers

Carriers

D: Both soluble and insoluble antigens

Both soluble and insoluble antigens

Correct Alternative :- B

91 The sugars associated with diabetic cataract in human eye lens are :
The sugars associated with diabetic cataract in human eye lens are :

A: fructose and sorbitol

fructose and sorbitol

B: glucose and ribose

glucose and ribose

C: fructose and glucose

fructose and glucose

D: fructose and galactose

fructose and galactose

Correct Alternative :- A

92 Immediate type hypersensitivity reactions are mediated by :
Immediate type hypersensitivity reactions are mediated by :

A: only IgE

only IgE

B: either IgE or IgG and IgM

either IgE or IgG and IgM

C: only IgG and IgM

only IgG and IgM

D: only IgM

only IgM

Correct Alternative :- B

93 The enzyme deficiency in phenylketonuria is _____.
The enzyme deficiency in phenylketonuria is _____.

A: Glucose 6-phosphatase

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Glucose 6-phosphatase

B: Alkaline phosphatase

Alkaline phosphatase

C: Phenylalanine 4-monooxygenase

Phenylalanine 4-monooxygenase

D: Glucocerebrosidase

Glucocerebrosidase

Correct Alternative :- C

94

The inhibitor of translation which is analogous to amino acyl tRNA and inhibits elongation process :
The inhibitor of translation which is analogous to amino acyl tRNA and inhibits elongation process :

A: Puromycin

Puromycin

B: Tetracycline

Tetracycline

C: Streptomycin

Streptomycin

D: Fusidic acid

Fusidic acid

Correct Alternative :- A

95

Eadie-Hofstee plot is obtained by plotting :
Eadie-Hofstee plot is obtained by plotting :

A: V vs $\frac{V}{S}$

B: $\frac{V}{(S)}$ vs V

C: $\frac{V}{S}$ vs S

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

D: S vs $\frac{V}{S}$

Correct Alternative :- B

96 The polysaccharide found in tubers and roots of dahlias is :
The polysaccharide found in tubers and roots of dahlias is :

A: Cellulose

Cellulose

B: Chitin

Chitin

C: Glycogen

Glycogen

D: Inulin

Inulin

Correct Alternative :- D

97 The hybridoma technique of antibody production was developed by :
The hybridoma technique of antibody production was developed by :

A: Kohler and Milesteine

Kohler and Milesteine

B: Onchterlony

Onchterlony

C: Edwar Jenner

Edwar Jenner

D: Berson and Yallow

Berson and Yallow

Correct Alternative :- A

98 Macrophage-like cells present in connective tissue are called as :
Macrophage-like cells present in connective tissue are called as :

A: Kupffer cells

Kupffer cells

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

B: Histiocytes

Histiocytes

C: Mesengial cells

Mesengial cells

D: Microglial cells

Microglial cells

Correct Alternative :- B

99

Riboflavin is a by-product of _____ fermentation carried out by clostridium spp.

Riboflavin is a by-product of _____ fermentation carried out by clostridium spp.

A: citric acid

citric acid

B: acetone butanol

acetone butanol

C: ethanol

ethanol

D: streptomycin

Streptomycin

Correct Alternative :- B

100

The maximum concentration of ethanol that is achieved by successive distillation of fermentation broth in continuous stills is :

The maximum concentration of ethanol that is achieved by successive distillation of fermentation broth in continuous stills is :

A: 70%

70%

B: 95%

95%

C: 60%

60%

D: 99%

99%

Correct Alternative :- B

101

To identify carboxy terminal aminoacids in peptides, the reagent used is :

To identify carboxy terminal aminoacids in peptides, the reagent used is :

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- A: Hydrazine
Hydrazine
- B: Dansyl chloride
Dansyl chloride
- C: 1-fluro-2, 4 dinitro benzene
1-fluro-2, 4 dinitro benzene
- D: Phenyl Isothiocyanate
Phenyl Isothiocyanate

Correct Alternative :- A

102 The cytosolic NADH transported by Aspartate-Malate shuttle enters the respiratory chain at the level of :
The cytosolic NADH transported by Aspartate-Malate shuttle enters the respiratory chain at the level of :

- A: NADH-Q reductase
NADH-Q reductase
- B: Ubiquinone
Ubiquinone
- C: Cytochrome - C
Cytochrome - C
- D: Cytochrome C-oxidase
Cytochrome C-oxidase

Correct Alternative :- A

103 Catalytic antibodies with structural complementarity for enzyme catalysed reaction is _____.
Catalytic antibodies with structural complementarity for enzyme catalysed reaction is _____.

- A: Ribozymes
Ribozymes
- B: Abzymes
Abzymes
- C: Liposomes
Liposomes
- D: Isoenzymes
Isoenzymes

Correct Alternative :- B

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

104 Which of these statement is incorrect with respect to epigenetic changes during somoclonal variation ?
Which of these statement is incorrect with respect to epigenetic changes during somoclonal variation ?

- A: alteration in chromosome number
alteration in chromosome number
- B: alteration in DNA sequence
alteration in DNA sequence
- C: alteration in the expression of genome
alteration in the expression of genome
- D: alteration in the chromosome structure
alteration in the chromosome structure

Correct Alternative :- B

105 Analogous of lactose, which are effective inducer without being the substrate for β -galactosidase are called :
Analogous of lactose, which are effective inducer without being the substrate for β -galactosidase are called :

- A: gratuitous inducers
gratuitous inducers
- B: activators
activators
- C: inducers
inducers
- D: co-activators
co-activators

Correct Alternative :- A

106 Which of the following is not a condition that leads to ketosis ?
Which of the following is not a condition that leads to ketosis ?

- A: Starvation
Starvation
- B: Uncontrolled Diabetes Mellitus
Uncontrolled Diabetes Mellitus
- C: High carbohydrate diet
High carbohydrate diet
- D: Von-Gierke's disease

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Von-Gierke's disease

Correct Alternative :- C

107 The antigens with molecular weight greater than 6000 daltons :
The antigens with molecular weight greater than 6000 daltons :

- A: are not immunogenic
are not immunogenic
- B: are generally immunogenic
are generally immunogenic
- C: may or may not be immunogenic
may or may not be immunogenic
- D: act as haptens
act as haptens

Correct Alternative :- B

108 Which of the following hormone exert a lipotropic effect in liver ?
Which of the following hormone exert a lipotropic effect in liver ?

- A: Estrogen
Estrogen
- B: Thyroid hormone
Thyroid hormone
- C: Insulin
Insulin
- D: ACTH
ACTH

Correct Alternative :- A

109 The reason urine does not seep out of the bladder is due to the role of :
The reason urine does not seep out of the bladder is due to the role of :

- A: adherens junctions
adherens junctions
- B: hemidesmosomes
hemidesmosomes

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

- C: gap junction
gap junction
D: tight junction
tight junction

Correct Alternative :- D

- 110 If sheep red blood cells coated with IgG antibodies are mixed with _____ cells, Rosette formation occurs.
If sheep red blood cells coated with IgG antibodies are mixed with _____ cells, Rosette formation occurs.

- A: Plasma cells
Plasma cells
B: T-helper cells
T-helper cells
C: T - suppressor cells
T - suppressor cells
D: B - cells
B - cells

Correct Alternative :- D

- 111 Which one of the following planets rises few hours before Sunrise ?
Which one of the following planets rises few hours before Sunrise ?

- A: Jupiter
Jupiter
B: Mars
Mars
C: Venus
Venus
D: Uranus
Uranus

Correct Alternative :- C

- 112 Bokaro Steel Plant is located in :
Bokaro Steel Plant is located in :

- A: Jharkhand

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Jharkhand

B: Odisha

Odisha

C: West Bengal

West Bengal

D: Bihar

Bihar

Correct Alternative :- A

113 Which gas is present more in air ?
Which gas is present more in air ?

A: Oxygen

Oxygen

B: Carbon-di-oxide

Carbon-di-oxide

C: Nitrogen

Nitrogen

D: Hydrogen

Hydrogen

Correct Alternative :- C

114 Leakage of LPG gas in our homes can be detected by mixing it with _____.
Leakage of LPG gas in our homes can be detected by mixing it with _____.

A: Methane

Methane

B: Methane + little ethane

Methane + little ethane

C: Propane + butane

Propane + butane

D: Ethyl mercaptan

Ethyl mercaptan

Correct Alternative :- D

115 Which of the following process, does not require a medium ?

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Which of the following process, does not require a medium ?

- A: Convection
Convection
- B: Conduction
Conduction
- C: Radiation
Radiation
- D: All of these
All of these

Correct Alternative :- C

116

During the period of _____ the Nalanda University was established.
During the period of _____ the Nalanda University was established.

- A: Kumara Gupta
Kumara Gupta
- B: Chandra Gupta Maurya
Chandra Gupta Maurya
- C: II Chandra Gupta
II Chandra Gupta
- D: Samudra Gupta
Samudra Gupta

Correct Alternative :- A

117

What is the full form of 'RIELIT' ?
What is the full form of 'RIELIT' ?

- A: Regional Institute for English Language and Information Technology
Regional Institute for English Language and Information Technology
- B: Rehabilifation and Training
Rehabilifation and Training
- C: Regional Institute of e-learning and Information Technology
Regional Institute of e-learning and Information Technology
- D: Research Institute for English Literature
Research Institute for English Literature

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- C

118 During Second Carnatic War whom the French supported ?
During Second Carnatic War whom the French supported ?

- A: Muza Far Sung, Muhammed Ali
Muza Far Sung, Muhammed Ali
- B: Nazirsung, Anwaruddin
Nazirsung, Anwaruddin
- C: Muzafar Sung, Chandasaheeb
Muzafar Sung, Chandasaheeb
- D: Muzafar Sung, Anwaruddin
Muzafar Sung, Anwaruddin

Correct Alternative :- C

119 Expansion of VVPAT _____ .
Expansion of VVPAT _____ .

- A: Voters Verified Paper Account Trail
Voters Verified Paper Account Trail
- B: Voters Verified Paperless Account Trail
Voters Verified Paperless Account Trail
- C: Voters Verified Paperless Audit Trail
Voters Verified Paperless Audit Trail
- D: Voters Verified Paper Audit Trail
Voters Verified Paper Audit Trail

Correct Alternative :- D

120 The country which is called the "Museum of Human Race" :
The country which is called the "Museum of Human Race" :

- A: Malaysia
Malaysia
- B: Switzerland
Switzerland
- C: India
India

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

D: Japan
Japan

Correct Alternative :- C

121 The name Stephen M. Corey is associated with _____.
The name Stephen M. Corey is associated with _____.

- A: Action Research
Action Research
- B: Instructional designing
Instructional designing
- C: e-content designing and development
e-content designing and development
- D: Mobile learning
Mobile learning

Correct Alternative :- A

122 Difficulty in learning and remembering names, telephone numbers, multiplication tables but possible good performances in analytic and intuitive tasks that do not involve memory, these can be categorized under _____.
Difficulty in learning and remembering names, telephone numbers, multiplication tables but possible good performances in analytic and intuitive tasks that do not involve memory, these can be categorized under _____.

- A: Poor ability to combine movement and vision
Poor ability to combine movement and vision
- B: Poor grasp of sequence
Poor grasp of sequence
- C: Gaps in general knowledge
Gaps in general knowledge
- D: Problems in style of learning
Problems in style of learning

Correct Alternative :- D

123 _____ denotes the law or science of work. The study of a specific kind of behaviour : that of a man making a programmed physical or mental effort in return for some remuneration.
_____ denotes the law or science of work. The study of a specific kind of behaviour : that of a man making a programmed physical or mental effort in return for some remuneration.

A: Cybernetics

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Cybernetics

B: Devaluation

Devaluation

C: Synergism

Synergism

D: Ergonomics

Ergonomics

Correct Alternative :- D

124

In the skill of probing questions _____ component represents that, 'questions which seek from the pupil to compare the phenomenon with other phenomenon for similarity or contrast or for any other relationship'.

In the skill of probing questions _____ component represents that, 'questions which seek from the pupil to compare the phenomenon with other phenomenon for similarity or contrast or for any other relationship'.

A: Prompting (P)

Prompting (P)

B: Seeking Further Information (SFI)

Seeking Further Information (SFI)

C: Re-Focussing (RF)

Re-Focussing (RF)

D: Increasing Critical Awareness (ICA)

Increasing Critical Awareness (ICA)

Correct Alternative :- C

125

The Government of India appointed a committee on Correspondence Courses and evening colleges in 1961 under the chairmanship of _____.

The Government of India appointed a committee on Correspondence Courses and evening colleges in 1961 under the chairmanship of _____.

A: K.L. Shrimali

K.L. Shrimali

B: V.V. Giri

V.V. Giri

C: D.S. Kothari

D.S. Kothari

D: Prof. M.V. Mathur

Prof. M.V. Mathur

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- A

126 Which concept will be mostly formed when celebration of festivals is taught in class ?
Which concept will be mostly formed when celebration of festivals is taught in class ?

- A: Number
Number
- B: Social environment
Social environment
- C: Physical environment
Physical environment
- D: Colour
Colour

Correct Alternative :- B

127 In _____ reinforcement schedule the organism is rewarded for a response made only after a span of time.
In _____ reinforcement schedule the organism is rewarded for a response made only after a span of time.

- A: Continuous
Continuous
- B: Fixed interval
Fixed interval
- C: Fixed ratio
Fixed ratio
- D: Variable
Variable

Correct Alternative :- B

128 _____ has coined the phrase " learning set" to describe the phenomenon of learning how to learn.
_____ has coined the phrase " learning set" to describe the phenomenon of learning how to learn.

- A: Harry Harlow
Harry Harlow
- B: Charles Judd
Charles Judd
- C: Ivan Pavlov
Ivan Pavlov

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

D: Alfred Binet
Alfred Binet

Correct Alternative :- A

129 In retrieval tasks, the tendency for items at the beginning and at the end of a list to be recalled more readily is called as _____.
In retrieval tasks, the tendency for items at the beginning and at the end of a list to be recalled more readily is called as _____.

- A: Recency effect
Recency effect
- B: Serial position effect
Serial position effect
- C: Primacy effect
Primacy effect
- D: Latency effect
Latency effect

Correct Alternative :- B

130 Which theory emphasized in its hypothesis the role of the hippocampal formation and its close association with the amygdala ?
Which theory emphasized in its hypothesis the role of the hippocampal formation and its close association with the amygdala ?

- A: Maclean's theory of emotions
Maclean's theory of emotions
- B: Papez's theory of emotions
Papez's theory of emotions
- C: Arnold's theory of emotions
Arnold's theory of emotions
- D: Schachter's theory of emotions
Schachter's theory of emotions

Correct Alternative :- A

131 _____ of the Indian Constitution deals with the promotion of educational and economic interest of the scheduled castes, scheduled tribes and other weaker sections.
_____ of the Indian Constitution deals with the promotion of educational and economic interest of the scheduled castes, scheduled tribes and other weaker sections.

- A: Article 42

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Article 42

B: Article 22

Article 22

C: Article 26

Article 26

D: Article 46

Article 46

Correct Alternative :- D

132 Howard Gardner's Multiple Intelligence Theory describes _____ types of intelligence.
Howard Gardner's Multiple Intelligence Theory describes _____ types of intelligence.

A: 6

6

B: 7

7

C: 8

8

D: 10

10

Correct Alternative :- C

133 _____ popularized teaching machines in learning.
_____ popularized teaching machines in learning.

A: Spearman

Spearman

B: Skinner

Skinner

C: Thorndike

Thorndike

D: Piaget

Piaget

Correct Alternative :- B

134 _____ is an example of instrumental conditioning based on negative reinforcement.

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

_____ is an example of instrumental conditioning based on negative reinforcement.

- A: Concept based learning
Concept based learning
- B: Lateral learning
Lateral learning
- C: Insightful learning
Insightful learning
- D: Trial and error learning
Trial and error learning

Correct Alternative :- C

135 _____ interest indicates a preference for meeting and dealing with people and promoting projects for things to sell.
_____ interest indicates a preference for meeting and dealing with people and promoting projects for things to sell.

- A: Scientific
Scientific
- B: Literary
Literary
- C: Social service
Social service
- D: Persuasive
Persuasive

Correct Alternative :- D

136 NCERT conducted the second All India Educational Survey in the year _____.
NCERT conducted the second All India Educational Survey in the year _____.

- A: 1965
1965
- B: 1971
1971
- C: 1972
1972
- D: 1969
1969

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Correct Alternative :- A

- 137 If a counsellor has recorded highly confidential information about a student, this record should be filed separately, this is done contextually and be termed as _____.
- If a counsellor has recorded highly confidential information about a student, this record should be filed separately, this is done contextually and be termed as _____.

- A: Authenticity
Authenticity
- B: Objectivity
Objectivity
- C: Reliability
Reliability
- D: Secrecy
Secrecy

Correct Alternative :- D

- 138 Evaluation whether the diagnostic, formative (or) summative may play its role in exercising few functions related with devising of the teaching-learning tasks. This is related to _____.
- Evaluation whether the diagnostic, formative (or) summative may play its role in exercising few functions related with devising of the teaching-learning tasks. This is related to _____.

- A: Motivational functions
Motivational functions
- B: Planning functions
Planning functions
- C: Informational or communicational functions
Informational or communicational functions
- D: Decision making functions
Decision making functions

Correct Alternative :- B

- 139 The chief principle of _____ philosophy is that man creates his own values; there are no fixed eternal truths.
The chief principle of _____ philosophy is that man creates his own values; there are no fixed eternal truths.

- A: Realism
Realism
- B: Existentialism

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Existentialism

C: Naturalism

Naturalism

D: Pragmatism

Pragmatism

Correct Alternative :- D

140 _____ is a type of fixation in which an individual tries to solve a problem in a particular way that has worked in the past.
_____ is a type of fixation in which an individual tries to solve a problem in a particular way that has worked in the past.

A: Apperception

Apperception

B: Assimilation

Assimilation

C: Shaping

Shaping

D: Mental Set

Mental Set

Correct Alternative :- D

141 This test is used as an indicator of aptitude for bench work which involves rapid manipulation of objects :
This test is used as an indicator of aptitude for bench work which involves rapid manipulation of objects :

A: Finger Dexterity Test

Finger Dexterity Test

B: Clerical Ability Test

Clerical Ability Test

C: Mechanical Aptitude Test

Mechanical Aptitude Test

D: O' Connor's Wiggly Block Test

O' Connor's Wiggly Block Test

Correct Alternative :- A

142 In Herbartian approach to lesson planning _____ step is related with the task of strengthening the acquisition of new learning material.
In Herbartian approach to lesson planning _____ step is related with the task of strengthening the acquisition of new learning material.

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

A: Presentation

Presentation

B: Comparison (or) Association

Comparison (or) Association

C: Generalization

Generalization

D: Application

Application

Correct Alternative :- B

143

The Constitution (86th amendment) Act of _____ year inserted _____ Article in the Constitution of India to provide free and compulsory education of all children in the age group of 6 to 14 years as a Fundamental right.

The Constitution (86th amendment) Act of _____ year inserted _____ Article in the Constitution of India to provide free and compulsory education of all children in the age group of 6 to 14 years as a Fundamental right.

A: 2001, Article 46

2001, Article 46

B: 2010, Article 12-A

2010, Article 12-A

C: 2009, Article 45-A

2009, Article 45-A

D: 2002, Article 21-A

2002, Article 21-A

Correct Alternative :- D

144

Based on Gagne's hierarchy of learning, in _____ learning the learner acquires the ability to understand the common properties of a group of substances that might still vary from one another.

Based on Gagne's hierarchy of learning, in _____ learning the learner acquires the ability to understand the common properties of a group of substances that might still vary from one another.

A: Verbal association

Verbal association

B: Multiple discrimination

Multiple discrimination

C: Concept learning

Concept learning

D: Rule learning

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

Rule learning

Correct Alternative :- C

145 The policy statement was made in Parliament on April 5, 1977 declaring that along with UEE, highest priority in educational planning would be accorded to _____.

The policy statement was made in Parliament on April 5, 1977 declaring that along with UEE, highest priority in educational planning would be accorded to _____.

A: UPE

UPE

B: Secondary Education

Secondary Education

C: Higher Education

Higher Education

D: Adult Education

Adult Education

Correct Alternative :- D

146 The teacher must provide identity between historical and present-day events is an example of :
The teacher must provide identity between historical and present-day events is an example of :

A: The principle of multiple response

The principle of multiple response

B: The principle of mental set

The principle of mental set

C: The principle of partial activity

The principle of partial activity

D: The principle of assimilation

The principle of assimilation

Correct Alternative :- D

147 UGC launched the _____ project on August 15, 1984.
UGC launched the _____ project on August 15, 1984.

A: CIET

CIET

B: CWCR

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

CWCR

C: SITE

SITE

D: PLAN

PLAN

Correct Alternative :- B

148

The _____ is a technique that provides the counsellor with an opportunity to understand a client's knowledge regarding a topic such as career information.

The _____ is a technique that provides the counsellor with an opportunity to understand a client's knowledge regarding a topic such as career information.

A: In take interviews

In take interviews

B: Guess who

Guess who

C: Sociometric

Sociometric

D: Card sort

Card sort

Correct Alternative :- D

149

"Behaviour that occurs at a naturally high rate of frequency may be used to reinforce behaviour that occurs at a naturally low rate of frequency" is :

"Behaviour that occurs at a naturally high rate of frequency may be used to reinforce behaviour that occurs at a naturally low rate of frequency" is :

A: Programmed instruction

Programmed instruction

B: Operant conditioning

Operant conditioning

C: Halo effect

Halo effect

D: Premack principle

Premack principle

Correct Alternative :- D

TEACHERS RECRUITMENT BOARD
Post Graduate Assistants 2018-2019
Subject – Bio Chemistry
Question Paper – Tentative key
Date of Exam – 28.09.2019 & Session - AN

150 The Central Hindu College at Benaras was founded by _____ in _____.
The Central Hindu College at Benaras was founded by _____ in _____.

A: Ishwar Chandra Vidyasagar, 1901

Ishwar Chandra Vidyasagar, 1901

B: Swami Dayanand Saraswathi, 1875

Swami Dayanand Saraswathi, 1875

C: Sri Ramakrishna Mission, 1915

Sri Ramakrishna Mission, 1915

D: Annie Besant, 1898

Annie Besant, 1898

Correct Alternative :- D