

PART : BIOLOGY

Section - A (Biology : Botany)

Section-I

Single Choice Type

This section contains **35 Single choice questions**. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **Only One** is correct.

35 ,dy fodYi iz'u gS izR;sd iz'u ds4 fodYi (1), (2), (3) rFkk (4) gS fuesds flQZ,d Igh gSA

101. Amensalism can be represented as :

- | | |
|----------------------------------|-----------------------------------|
| (1) Species A (+) ;Species B (+) | (2) Species A (-) ; Species B (-) |
| (3) Species A (+) ;Species B (0) | (4) Species A (-) ; Species B(0) |
- vUjtkfr; ijtkfodk dksfdl izdkj fu:fir fd;k tk ldrk gS
- | | |
|----------------------------|-----------------------------|
| (1) tkfr A (+) ;tkfr B (+) | (2) tkfr A (-) ; tkfr B (-) |
| (3) tkfr A (+) ;tkfr B (0) | (4) tkfr A (-) ; tkfr B(0) |

Ans. (4)

102. In the equation $GPP - R = NPP$ R represents:

- | | |
|------------------------|------------------------|
| (1) Retardation factor | (2) Environment factor |
| (3) Respiration losses | (4) Radiant energy |
- lehdj k $GPP - R = NPP$ esa R fdls fu:fir djrk gS
- | | |
|-----------------|-------------------|
| (1) eand dkjd | (2) i;kZoj k dkjd |
| (3) 'oluh; {kfr | (4) fofdj k ÅtkZ |

Ans. (3)

103. The plant hormone used to destroy weeds in a field is:

- | | | | |
|---------|-----------|---------|---------|
| (1) NAA | (2) 2,4-D | (3) IBA | (4) IAA |
|---------|-----------|---------|---------|
- ,d [ksr esa ?kklik dh lektr djus dsfy, dksu k iknd gkjeksu mi;ksx esa ay;k tkrk gS
- | | | | |
|------------|------------|--------------|------------|
| (1) ,u , , | (2) 2,4-Mh | (3) vkbZ h , | (4) vkbZ , |
|------------|------------|--------------|------------|

Ans. (2)

104. Which of the following is an incorrect statement?

- (1) Microbodies are present both in plant and animal cells.
- (2) The perinuclear space forms a barrier between the materials present inside the nucleus and that of the cytoplasm.
- (3) Nuclear pores act as passages for proteins and RNA molecules in both directions between nucleus and cytoplasm.
- (4) Mature sieve tube elements possess a conspicuous nucleus and usual cytoplasmic organelles.

fuEufyf[kr esds dksu k dFku xyr gS

- (1) lw{edk;} i knikavkSj tUrqvankasuk;stkrh gS
- (2) ifjdshzd h vodk" k] dshzd dsUnj mifLFkr inkFkkzv kSj dksfkdknzO; esa mifLFkr inkFkkzds hp vojksk dk dke djrk gSA
- (3) dshzd fNnz] dsUnzd vkSj dksfkdknzO; ds hp nksukfn"kkvka i zshu vjSvkj ,u , v kqkadsfy, ,d iFk dh Hkkfr dk;Zdjrs gSA
- (4) ifjiDo pkyuh ufydk rRokasa ,d Li"V dshzd vkSj k/kkj k dkfkdknzO; mi;ksx gkarsgSA

Ans. (4)

105. Which of the following is not an application of PCR (polymerase Chain Reaction) ?

- (1) Gene amplification
- (2) Purification of isolated protein
- (3) Detection of gene mutation
- (4) Molecular diagnosis

fuEufyf[kr esds dksu ,d ih lh vkj %ikfyejst Ja[kyk vfHkØ;k% dk ,d vuqiz;ksx ugh gS

- (1) tchu izo/kZu
- (2) i'Fkd fd;sx;si zshu dk 'kqf]dj k
- (3) tchu mRifjorZu dk irk yxkuk
- (4) vk kfod funku

Ans. (2)

106. Which of the following are not secondary metabolite in plants?

- (1) Amino acids, glucose
- (2) Vinblastin, curcumin
- (3) Rubber, gums
- (4) Morphine, codeine

fuEufyf[kr esds dksu iniasa f}rh;d mikip;t ughagS

- (1) ,ehuusa vEY Xywdk
- (2) fouCysLVhu] djD;wfeu
- (3) j j] xka
- (4) ekQhZu] dksMhu

Ans. (1)

107. Match List - I with List - II.

List - I		List - II	
(a)	Cristae	(i)	Primary constriction in chromosome
(b)	Thylakoids	(ii)	Disc-shaped sacs in Golgi apparatus
(c)	Centromere	(iii)	Infoldings in mitochondria
(d)	Cisternae	(iv)	Flattened membranous sacs in stroma of plastids

Match List - I with List - II.

List - I		List - II	
(a)	Primary constriction in chromosome	(i)	Primary constriction in chromosome
(b)	Disc-shaped sacs in Golgi apparatus	(ii)	Disc-shaped sacs in Golgi apparatus
(c)	Infoldings in mitochondria	(iii)	Infoldings in mitochondria
(d)	Flattened membranous sacs in stroma of plastids	(iv)	Flattened membranous sacs in stroma of plastids

Choose the correct answer from the options given below.

Match List - I with List - II.

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

Ans. (2)

108. DNA strands on a gel stained with ethidium bromide when viewed under UV radiation, appear

- | | |
|-------------------------|--------------------|
| (1) Bright orange bands | (2) Dark red bands |
| (3) Bright blue bands | (4) Yellow bands |
- Choose the correct answer from the options given below.
- | | |
|-------------------------|----------------------|
| (1) pedhyh ukjñ ifv~;ka | (2) xgjh yky ifv~;ka |
| (3) pedhyh uyh ifv~;ka | (4) ihyh ifv~;ka |

Ans. (1)

109. The production of gametes by the parents, formation of zygotes, the F₁ and F₂ plants, can be understood from a diagram called:

- | | | | |
|------------------|--------------------|----------------|-------------------|
| (1) Punch square | (2) Punnett square | (3) Net square | (4) Bullet square |
|------------------|--------------------|----------------|-------------------|
- Choose the correct answer from the options given below.
- | | | | |
|-------------|--------------|-------------|--------------|
| (1) iap oxZ | (2) iusV oxZ | (3) usV oxZ | (4) qysV oxZ |
|-------------|--------------|-------------|--------------|

Ans. (2)

110. The first stable product of CO₂ fixation in sorghum is
- (1) Oxaloacetic acid (2) Succinic acid
 (3) Phosphoglyceric acid (4) Pyruvic acid

lkSj/ke esa CO₂ fLFkjhdj k esa igyk LFkk;h mRi kn D;k gSA

- (1) vkDtsyksf lfvd vEy (2) IDlfud vEy
 (3) QkLQksXyh lfjd vEy (4) ikb : fod vEy

Ans. (1)

111. In spite of interspecific competition in nature, which mechanism the competing species might have evolved for their survival?

- (1) Competitive release (2) Mutualism
 (3) Predation (4) Resource partitioning

izØfr esa varjtkrh; izLi/kkZs kotwn] izfrLi/kkZjus okyh tkr;ka viuh mÜkjthfodk dsfy, dkSu lh fof/k fodk l fd;k gksxt\

- (1) Li/kkZueqZDr (2) lgsidkfjrk
 (3) Hkfk k (4) lalk/ku foHkk tu

Ans. (4)

112. Which of the following statements is not correct?
- (1) Pyramid of biomass in sea is generally upright.
 (2) Pyramid of energy is always upright.
 (3) Pyramid of numbers in a grassland ecosystem is upright.
 (4) Pyramid of biomass in sea is generally inverted.

fuEufyf[ke esa dkSu lk dFku lgh gS

- (1) leqnz esa tsjk dk fjsM l/kkj kr;k lh/kk gksrk gS
 (2) ÅtkZlk fjsfeM lnSo lh/kk gksrk gSA
 (3) ,d ?kk l Hkwfe ifjru=k esa la;k dk fjsfeM lh/kk gksrk gS
 (4) leqnz esa tSoHkkj dk fjsM l/kkj kr;k mYVk gksrk gSA

Ans. (1)

113. The site of perception of light in plants during photoperiodism is :

- (1) Stem (2) Axillary bud (3) Leaf (4) Shoot apex

izdk'kd kfydrk dsnkSjku kni esa izdk'k dsvoxeu dk LFkku dkSu lk gS

- (1) ruk (2) d{kh; dfydk (3) iÜkh (4) izjks 'kh" kZ

Ans. (3)

114. Match List – I with List - II.

lwph – I with lwph - II.

List - I		List - II	
(a)	Lenticels	(i)	Phellogen
(b)	Cork cambium	(ii)	Suberin deposition
(c)	Secondary cortex	(iii)	Exchange of gases
(d)	Cork	(iv)	Phelloderm

Choose the correct answer from the options given below.

uhps fn;sx;sfodYika;sa lgh mUkj pqfu;sa

lwph - I		lwph - II	
(a)	Okkr jAz	(i)	dkxtu
(b)	dkdZSfEa;e	(ii)	lqba sfju fu{ksr k
(c)	f}rh;d oYdqV	(iii)	xSlkadk vknku&iznku
(d)	dkx	(iv)	dkx&vLrj

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

Ans. (1)

115. Match List - I with List - II.

lwph – I with lwph - II.

List - I		List - II	
(a)	Protoplast fusion	(i)	Totipotency
(b)	Plant tissue culture	(ii)	Pomato
(c)	Meristem culture	(iii)	Somaclones
(d)	Micropropagation	(iv)	Virus free plants

Choose the correct answer from the options given below.

uhps fn;sx;sfodYika;sa lslgh mUkj pqfu;sa

List - I		List - II	
(a)	thonzO;	(i)	ivZ'kDrrk
(b)	ikni mUkd lao/kZu	(ii)	ikesvks
(c)	esfjLVse lao/kZu	(iii)	lksekDyksu
(d)	lw{eizo/kZu	(iv)	fo"kkokqDr ikni

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

Ans. (1)

116. Match List - I with List - II.
lwph – I with lwph - II.

List - I		List - II	
(a)	Cohesion	(i)	More attraction in liquid phase
(b)	Adhesion	(ii)	Mutual attraction among water molecules
(c)	Surface tension	(iii)	Water loss in liquid phase
(d)	Guttation	(iv)	Attraction towards polar surfaces

Choose the correct answer from the options given below.

uhps fn;sx;sfodYika;sa lslgh mÜkj pqfu;sa

lwph - I		lwph - II	
(a)	lltu	(i)	nzo voLFkk esa viskkNr vf/kd vkd"kkZ
(b)	vklatu	(ii)	ty v"kvkadsrhp ijkLifjd vkd"kkZ
(c)	i"b ruko	(iii)	nzo voLFkk esa ty gkfu
(d)	fñJnq L=kko	(iv)	/kzoh; i"bksadh vksj vkd"kkZ

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

Ans. (4)

117. When gene targetting involving gene amplification is attempted in an individual's tissue to treat disease, it is known as:

- (1) Gene therapy (2) Molecular diagnosis
(3) Safety testing (4) Biopiracy

jkxs dksBhd djus dsfy,] tu izo/kZu djrs gq ,d th dh y{; fd;k x;k gS ;g iD;k D;k dgykrh gS

- (1) th fpdfRlk (2) vk kfod funku
(3) lqj{kk ijh{k k (4) k;ksikbjslh

Ans. (1)

118. Diadelphous stamens are found in :

- (1) Citrus (2) Pea (3) China rose and citrus(4) China rose

f}la/kh iqlsj fdles ik;stkrh gS

- (1) uha w (2) eVj (3) pkbuk jkst vk\$uh w (4) pkbuk jkst

Ans. (2)

119. A typical angiosperm embryo sac at maturity is:

- (1) 7-nucleate and 8-celled (2) 7-nucleate and 7-celled
(3) 8-nucleate and 8-celled (4) 8-nucleate and 7-celled

ifjiDo voLFkk esa ,d iit: ih vko`r hthHkzksk fuEufyf[kr esa lsdksulk gksrk gS

- (1) 7-dllndh; vkSj 8-dksf'kdh; (2) 7-dllndh; vkSj 7-dksf'kdh;
(3) 8-dllndh; vkSj 8-dksf'kdh; (4) 8-dllndh; vkSj 7-dksf'kdh;

Ans. (4)

120. Match List – I with List – II
lwph – I dskFk lwph - II.

List – I		List – I	
(a)	Cells with active division capacity	(i)	Vascular tissues
(b)	Tissue having all cells similar and structure and function	(ii)	Meristematic tissue
(c)	Tissue having different types of cells	(iii)	Sclereids
(d)	Dead cells with highly thickened walls and narrow lumen	(iv)	Simple tissue

Select the correct answer from the option given below.

uhps fn;sx;sfodYika:slgh mUkj pqfu;sa

lwph – I		lwph – I	
(a)	IfØ; dskdk fohkk tu dh {kerk okyh dskdk; a	(i)	Lakogu ÅÜkd
(b)	,d ÅÜkd ftesa IHkh dskdk; alajpuk vkSj dk; Zih n'fV ls leku gSA	(ii)	fohkT;ksrd
(c)	fohkUu izkj dh dskdkvksyk ÅÜkd	(iii)	fLdfyfjM
(d)	vR;f/kd eksvh fohkUk ,oadjh xqfgdk okyh e`r dskdk;s	(iv)	Ljy ÅÜkd

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

Ans. (4)

121. The term used for transfer of pollen grains from anthers of one plant to stigma of a different plant which, during pollination, brings genetically different types of pollen grains to stigma, is :

- (1) Geitonogamy (2) Chasmogamy (3) Cleistogamy (4) Xenogamy
,d ikni dsijxdk dsk ,d fhké iin ds ofrZdkx ij LFkkukUrj k dsfy, dksu k 'kCn iz;qDr gksrk gSA ftesa ijxd k dsrkSjku ofrZdkx ij vkuqokafkd :i esa fohkUu izdkj dsijxd k yk;stkrsgS
(1) Itkriq"ih ijxd k (2) mUehy ijx kh (3) vuqUehY; ijx kh (4) ijfu"kspu

Ans. (4)

122. Plants follow different pathways in response to environment or phases of life to form different kinds of structures. This ability is called:

- (1) Flexibility (2) Plasticity (3) Maturity (4) Elasticity
i;kZj k dsizR;qÜkj esa ikni fohkUu iFkksdk vuqLj k djrs gS; k fohkUu izdkj dh lajpvksdsvuekZ k dsfy, fohkUu voLFkkvksdk vuqLj k djrs gSA bI {kerk dskD;k dgk tkrk gS
(1) uE;rk (2) lq?kV;rk (3) ifjiDork (4) izR;kLFkrk

Ans. (4)

123. Which of the following algae contains mannitol as reserve food material?

- (1) Gracillaria (2) volvox (3) Ulothrix (4) Ectocarpus
fuEufyfj[kr esa alsdksu 'kSy esa lap;h [kk ds:i esa eSuhVky gksrk gSA
(1) xzkflysfj;k (2) okll'ookDI (3) ;wyksf'kzDI (4) ,DVksdkZI

Ans. (4)

124. Complete the flow chart on central dogma.

- DNA ^(b) mRNA ^(c) (d)
- (a)
- (1) (a)-Translation; (b)-Replication;
(c)-Transcription; (d)-Transduction
 - (2) (a)-Replication; (b)-Transcription;
(c)-Translation; (d)-Protein
 - (3) (a)-Transduction; (b)-Translation;
(c)-Replication;(d)-Protein
 - (4) (a)-Replication; (b)-Transcription;
(c)-Transduction; (d)-Protein

ewy fl}kUr %sUV^y MksXek% dk iWzokg fp=k gS

- DNA ^(b) mRNA ^(c) (d)
- (a)
- (1) (a)- : iKUrj k; (b)- izfrÑfrdj k
(c)- vuqys[ku; (d)- ijØe k
 - (2) (a)- izfrÑfrdj k; (b)- vuqys[ku;
(c)- : iKUrj k; (d)- iZVhu
 - (3) (a)- izfrÑfrdj k; (b)- : iKUrj k;
(c)- : iKUrj k; (d)- iZVhu
 - (4) (a)- izfrÑfrdj k; (b)- vuqys[ku;
(c)- ijØe k; (d)- iZVhu

Ans. (2)

125. Which the following plants is monoecious ?

- | | |
|----------------------|---------------------------|
| (1) Chara | (2) Marchantia polymorpha |
| (3) Cycas circinalis | (4) Carica papaya |
- fuEufyf[kr esds dksu ik iKni mHk;fyxakJ;h gS
- | | |
|--------------------|----------------------|
| (1) dkjk | (2) ekdZ;k ikfyekQkZ |
| (3) lkbdl iflZuayl | (4) dSfdk iik;k |

Ans. (1)

126. Mutation in plant cells can be induced by:

- | | | | |
|-------------------|----------------|------------|-------------|
| (A) Infrared rays | (2) Gamma rays | (3) Zeatin | (4) Kinetin |
|-------------------|----------------|------------|-------------|
- ikni dksfkdkvksa fdlds}kj mRifjorZu ijr fd;k tk ldrk gS
- | | | | |
|------------------|-----------------|------------|-----------|
| (A) vojDr fdj ka | (2) xkek fdj ka | (3) ft,fVu | (4) dkbVu |
|------------------|-----------------|------------|-----------|

Ans. (2)

127. Which of the following is a correct sequence of steps' a PCR (Polymerase Chain Reaction) ?

- (1) Denaturation, Extension, Annealing (2) Extension, Denaturation, Annealing
 (3) Annealing, Denaturation, Extension (4) Denaturation, Annealing, Extension

fuEufyf[kr esds] ikWfyejst Jkkyk vfHkfØ;k (ih lh vkj) dspj kkd dksu lk lgh vuqØe gS

- (1) fuf"Ø;dj k, izlkj, rkikuk'khy (2) izlkj, fuf"Ø;dj k, rkikuk'khy
 (3) rkikuk'khy, fuf"Ø;dj k, ikkj (4) fuf"Ø;dj k, rkikuk'khy, ikkj

Ans. (4)

128. Genera like Selaginella and Salvinia produce two kinds of spores. Such plants are known as :

- (1) Heterosorus (2) Homosporous (3) Heterosporous (4) Homosorus

dh oak tSsd flyst usyk vkSj lkfyofu;k nksizdkj ds htk kqRilfr djrs gS, isiniads;k dgk tkrk gS

- (1) gsVsksksl (2) le htk kqd (3) fo"ke htk kqd (4) gkksksjl

Ans. (3)

129. Which of the following stages of meiosis involves division of centromere?

- (1) Metaphase I (2) Anaphase II (3) Telophase II (4) Metaphase I

fuEufyf[kr esds v/kZlw=kh foHkk tu dh fd l volFkk esa xq khw=kh Unw dk foHkk tu gksrk gS

- (1) e/;oLFkk II (2) i'pkOLFkk II (3) v&koLFkk II (4) e/;oLFkk I

Ans. (2)

130. During the purification process for recombinant DNA technology, addition of chilled ethanol

- (1) DNA (2) Histones (3) Polysaccharides (4) RNA

iqu;kzt Mh ,u ,] isksfx dh dsfy, 'kqjd k iØ;k esa 'khr bFksukWy dksfeykus ls;g fdls vo(kstfir djrk gS

- (1) Mh ,u , (2) fgLVksu (3) ikWfyISdsjkbM (4) vkj ,u ,

Ans. (1)

131. The factor that leads to Founder effect in a population is :-

- (1) Genetic recombination (2) Mutation
 (3) Genetic drift (4) Natural selection

fuEufyf[kr esds dksu lk djkd ,d lef"V QkmaMj iHkkko mRie djrk gS

- (1) vkuqof"kd iqu;kztu (2) mRifjorZu
 (3) vkuqof"kd fopyu (4) izkNfrd 'kSoky

Ans. (3)

132. Which of the following algae produce Carrageen?

- (1) Brown algae. (2) Red algae
 (3) Blue-green algae (4) Green algae

fuEufyf[kr esds dksu ls"ksoky dsjxhu mRie djrs gS

- (1) Hkwijs 'kSoky (2) yky 'kSoky
 (3) uhy&gfjr 'kSoky (4) gfjr 'kSoky

Ans. (2)

133. Gemmae are present in:

- (1) Pteridophytes (2) Some Gymnosperms
(3) Some Liverworts (4) Mosses

తనెల దలెసా ిక;స్తకరె గె

- (1) VsfjMkQkbV esa (2) dqN vuko`r hth;ka
(3) dqN fyojovZ esa (4) ekWl esa

Ans. (3)

134. The amount of nutrients, such as carbon, nitrogen, phosphorus and calcium present in the soil at any given time, is referred as :

- (1) Climax community (2) Standing state (3) Standing crop (4) Climax

ధక జు] కుబV%kstu] QkLQksjl v%k dSY`k;e tSl iks`kadh e`nk esa ek=k] fdh fn;sx;le; esa dSlis lanfhkZr dh
tkrh gS

- (1) pje leqnk; (2) LFkk;h voLFkk (3) LFkk;h Qly (4) pje voLFkk

Ans. (2)

135. When the centromere is situated in the middle of two equal arms of chromosomes, the chromosome is referred as :

- (1) Telocentric (2) Sub- metacentric (3) Acrocentric (4) Metacentric

t xq klw=kf Unq] xq klw=k dh nks jk j Hkqtkv%adse/; esa fLFkr gksrk gS ;g D;k dgykrk gS

- (1) vard%lnzh (2) mie/;d%lnzh (3) vxzf Unqd (4) e/;d%lnzh

Ans. (4)

Section-II

Single Choice Type

This section contains **15 Single choice questions**. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **Only One** is correct.

b] [k M esa 15 ,dy fodYi ih iz'u gS ih;sd iz'u ds4 fodYi (1), (2), (3) rFkk (4) gS. Pit uesas flQZ,d lgh gS

136. DNA fingerprinting involves identifying differences in some specific regions in DNA sequence, called as:

- (1) Repetitive DNA (2) Single nucleotides (3) Polymorphic DNA (4) Satellite DNA

DNA vax%hNk ih esa DNA vuq%e esa dqN fof`k"V LFkkusa esa fHKUurk%ad h igpku dh tkrh gSof`k"V LFkkusa dksD;k
dggk tkrk gS

- (1) iqujko`fUk DNA (2) ,dy U;wfy;ksVkbM (3) gq:ih; DNA (4) vuq`kaxh DNA

Ans. (1)

137. Plasmid pBR322 has *PasI* restriction enzyme site within *gen amp^R* that confers ampicillin resistance. If this enzyme is used for inserting a gene for β -galactoside production and the recombinant plasmid is inserted in an *E. coli* strain

- (1) the transformed cells will have the ability to resist ampicillin as well as produce β -galactoside.
- (2) it will lead to lysis of host cell.
- (3) it will be able to produce a novel protein with dual ability.
- (4) it will not be able to confer ampicillin resistance to the host cell

lySfTeM pBR322 esthu amp^R dsVUnj PasI izfr alku ,Utkbe gSts,Eihflyhu izfrjksk n'kkZrk gS ;fn bI ,Utkbe dks hV&xSysDVkslkbM mRiknu dsfy, ,d tthu ds fyf, fuosf'kr fd;k tkrk gS ; si qu ; kzt lySfTeM dks b-dksyh LV^{su} esa fuosf'kr fd;k tkrk gS

- (1) : i karfjr dksf'kdkvksa ,Eihflyhu izfrjksk dh {kerk gksh vS ikFk gh hV&xSysDVkslkbM mRiknu djsxA
- (2) blesa ik's'kh dksf'kd es y;u gkst;k;sxk
- (3) blesa }Sr {kerk dskFk u;sis'lhnu mRiknu dh {kerk gkshA
- (4) ;g ik's'kh dksf'kd dks,Eihflyhu izfrjksk ugha uk ik;sxkA

Ans.

(4)

138. Match Column - I with Column - II.

LrEHk- I dks LrEHk -II ls lfyf dft,A

Column-I		Column-II	
(a)	Nitrococcus	(i)	Denitrification
(b)	Rhizobium	(ii)	Conversion of ammonia to nitrite
(c)	Thiobacillus	(iii)	Conversion of nitrite to nitrate
(d)	Nitrobacter	(iv)	Conversion of atmospheric nitrogen to ammonia

Choose the correct answer from options given below.

uhps fn;sx;sfodYika sa lslgh mUkj pqfu,A

LrEHk-I		LrEHk-II	
(a)	ukbV ^q ksdkl	(i)	foukbV ^q dj ^q
(b)	jbtk;e	(ii)	veksfu;k dk ukbV ^q bV esa ifjorZu
(c)	fFk;kSlhyI	(iii)	ukbV ^q bV dk ukbV ^q sV esa ifjorZu
(d)	ukbV ^q SDVj	(iv)	ok; qeaMyh; ukbV ^q stu dk veksu;k esa ifjorZu

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

Ans.

(4)

139. Match List- I with List - II.

lwph - I dkslwph- II ds kFk qsfyr dhft.,A

List- I		List- II	
(a)	Protein	(i)	C=C double bonds
(b)	Unsaturated fatty acid	(ii)	Phosphodiester bonds
(c)	Nucleic acid	(iii)	Glycosidic bonds
(d)	Polysaccharide	(iv)	Peptide bonds

lwph - I		lwph - II	
(a)	izks/vhu	(i)	C=C f}dU/k
(b)	vlar'lr o h; vEy	(ii)	QkLQksMkb, LVj aU/k
(c)	U; wDyh d vEy	(iii)	Xykb dkslkbM d aU/k
(d)	ikWvhl Sd j bM	(iv)	islvkbM aU/k

Choose the correct answer from the options given below.

uhps fn; sx; sod Yika sa isl gh mUk j pqfu, A

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

Ans.

140. Match List- I with List - II.

lwph - I dkslwph- II ds kFk qsfyr dhft.,A

List- I		List- II	
(a)	S phase	(i)	Proteins are synthesized
(b)	G ₂ phase	(ii)	Inactive phase
(c)	Quiescent stage	(iii)	Interval between mitosis and initiation of DNA replication
(d)	G ₁ phase	(iv)	DNA replication

lwph - I		lwph - II	
(a)	S voLFkk	(i)	izks/vhuksa dk la'ys'k gksrk gS
(b)	G ₂ voLFkk	(ii)	fuf'Ø; voLFkk
(c)	'kkar voLFkk	(iii)	DNA izfrNfrdj dsi ij EHK gksus ds ahp vUrjky
(d)	G ₁ voLFkk	(iv)	DNA dk izfrNfrdj

Choose the correct answer from the options given below.

uhps fn; sx; sod Yika sa isl gh mUk j pqfu, A

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

Ans.

141. Which the following statements is correct ?

- (1) Fusion of protoplasts between two motile on non-motile gametes is called plasmogamy.
- (2) Organisms that depend on living plants are called saprophytes.
- (3) Some of the organisms can fix atmospheric nitrogen in specialized cells called sheath K cells.
- (4) Fusion of two cells is called Karyogamy

fuEufyf[kr esds d@u lk dFku lgh gS

- (1) vpy ;qXed"aij n" py ;qXed"ads hp thæO; dsay;u d" d"f'kd æO;&y;u dgk tkrk gSA
- (2) t" tho thfor ikni"aij fuZ"rs gSAUgæ`ris itthoh dgk tkrk gS
- (3) dqN tho ok; qeaMyh; ukbV"tu ds vkPNkn d"f'kd dgk tkus okyh fof"k"V d"f'kdvksa fLFkj hÑr dj ldrs gS
- (4) n" d"f'kdvksadslay;u d" dslæd lay;u dgk tkrk gSA

Ans. (1)

142. Which of the following statements is incorrect?

- (1) Stroma lamellae have PS I only and lack NADP reductase.
- (2) Grana lamellae have both PS I and PS II
- (3) Cyclic photophosphorylation involves both PS I and PS II.
- (4) Both ATP and NADPH + H⁺ are synthesized during non-cyclic photophosphorylation.

fuEufyf[kr esds d@u lk dFku xyr gS

- (1) ihfBdk&ySfeyh esa dsOy PS I g"rk gSA NADP fjmDVs t dk vHkko g"rk gSA
- (2) xzkuk ySfeyh esa PS I vkSj PS II n"u"ag"rs gS
- (3) pØh; izdk'k QkLQ"fjys'ku esa PS I vkSj PS II n"u"aklfey g"rs gS
- (4) ATP vkSj NADPH + H⁺ n"u"adk xSj pØh; izdk'k QkLQ"fjys'ku ds n@jku la'ys'k k g"rk gS

Ans. (3)

143. Identity correct statement.

- (1) RNA polymerase binds with Rho factor to terminate the process of transcription in bacteria,
- (2) The coding strand in a transcription unit is copied to an mRNA.
- (3) Split gene arrangement is characteristic of prokaryotes.
- (4) In capping, methyl guanosine triphosphate is added to the 3' end of hn RNA.

fuEufyf[kr easls lgh dFku pafu,A

- (1) thok kqvksa vuqys[ku dh izfrØ;k dk lekiu djus dsfy, vkj-,u-, iwejst] Rho dkjd dslkFk fu/kr gks tkrk gSA
- (2) ,d vuqys[ku bdkbZsaw jTtd] ,d mRNA ij izÑr gksrk gSA
- (3) foHkDr th&o; oLFkk izdSj; kvksa dk fof"k"V y{k k gSA
- (4) dSfiax esa esfky Xokukslhu V^{ph}kbQkLQsV dks hn RNA ds 3' fljss tksMk tkrk gS

Ans. (1)

144. In the exponential growth equation

$N_t = N_0 e^{rt}$, e represents:

- (1) The base of exponential logarithms (2) The base of natural logarithms
 (3) The base of geometric logarithms (4) The base of number logarithms

$N_t = N_0 e^{rt}$

$N_t = N_0 e^{rt}$

- (1) e (2) e
 (3) e (4) e

Ans.

145. Now a days it is possible to detect the mutated gene causing cancer by allowing radioactive probe to hybridise its complimentary DNA in a clone of cells, followed by its detection using autoradiography because:

- (1) mutated gene completely and clearly appears on a photographic film.
 (2) mutated gene does not appear on a photographic film as the probe has no complementarity with it.
 (3) mutated gene does not appear on photographic film as the probe has complementarity with it.
 (4) mutated gene partially appears on a photographic film.

$N_t = N_0 e^{rt}$

- (1) e
 (2) e
 (3) e
 (4) e

Ans.

146. Match Column - I with Column - II.

Column-I

Column-I	Column-II
(a) $\frac{1}{2} K_{(5)} C_{1+2+(2)} A_{(9)+1} G_1$	(i) Brassicaceae
(b) $\frac{1}{2} K_{(5)} C_{(5)} A_5 G_2$	(ii) Liliaceae
(c) $\frac{1}{2} P_{(3+3)} A_{3+3} G_{(3)}$	(iii) Fabaceae
(d) $\frac{1}{2} K_{2+2} C_4 A_{2-4} G_{(2)}$	(iv) Solanaceae

LrEHk-I	LrEHk-II
(a) $\frac{1}{2} K_{(5)} C_{1+2+(2)} A_{(9)+1} G_1$	(i) $\frac{1}{2} K_{(5)} C_{(5)} A_5 G_2$
(b) $\frac{1}{2} K_{(5)} C_{(5)} A_5 G_2$	(ii) $\frac{1}{2} P_{(3+3)} A_{3+3} G_{(3)}$
(c) $\frac{1}{2} P_{(3+3)} A_{3+3} G_{(3)}$	(iii) $\frac{1}{2} K_{2+2} C_4 A_{2-4} G_{(2)}$
(d) $\frac{1}{2} K_{2+2} C_4 A_{2-4} G_{(2)}$	(iv) $\frac{1}{2} K_{(5)} C_{(5)} A_5 G_2$

Select the correct answer from the options given below.

Options

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

Ans.

147. Which of the following statements is incorrect?

- (1) In ETC (Electron Transport Chain), one molecule of NADH + H⁺ gives rise to 2ATP molecules, and one FADH₂ gives rise to 3ATP molecules.
- (2) ATP is synthesized through complex V.
- (3) Oxidation-reduction reactions produce proton gradient in respiration. .
- (4) During aerobic respiration, role of oxygen is limited to the terminal stage.

fuEufyf[kr esds dksu lk dFku xyr gS

- (1) b-Vh-lh (bysDV^akWu ifjogu Jky) esa, NADH + H⁺ ds, d v kqs , -Vh-ih- dsnksv kq urs gS, d FADH₂ rhu ATP v kq ursgS
- (2) , -Vh-ih- dk la'ys" k k lfEeJ v ds}kj k gsrk gS
- (3) mikip;u vfhkfo; k; , p'olu esa izsVksu izo krk mRiUu djrh gS
- (4) ok; oh; 'olu dsnkSV vKWDlh tu dh Hkwfedk vafre voLFkk rd lfher gS

Ans. (1)

148. What is the role of RNA polymerase III in the process of transcription in eukaryotes ?

- (1) Transcribes tRNA, 5s rRNA and snRNA
- (2) Transcribes precursor of mRNA
- (3) Transcribes only snRNAs
- (4) Transcribes rRNAs (28S, 18S and 5.8S)

llhedad thok esa vuqys[ku dh ifo; k esa vkj-, u-, - iyejst-III dh Hkwfedk D; k gS

- (1) tRNA, 5s rRNA vkSj snRNA dksvuqysf[kr djrk gS
- (2) mRNA dsi woZohZ dksvuqysf[kr djrk gS
- (3) dsoy snRNAs dksvuqysf[kr djrk gS
- (4) rRNAs (28S, 18S vkSj 5.8S) dksvuqysf[kr djrk gS

Ans. (1)

149. In some members of which of the following pairs of families, pollen grains retain their viability for months after release?

- | | |
|----------------------------|--------------------------|
| (1) Poaceae ; Leguminosae | (2) Poaceae ; Solanaceae |
| (3) Rosaceae ; Leguminosae | (4) Poaceae : Rosaceae |

fuEufyf[kr esds fdu dqy"as ; qXe esa mudsdqN lnL; "asaij kxd k"adh thou{kerk} mudseqa g"us ds kn eghu'a rd jgrh gS

- | | |
|-------------------------|---------------------|
| (1) i",lh] ysX;qfeu"lh | (2) i",lh] l"ysuslh |
| (3) j"tsh] ysX;qfeukslh | (4) iksh] jkstsh |

Ans. (3)

150. Select the correct pair.
- | | | |
|--|---|-------------------------|
| (1) In dicot leaves, vascular bundles are surrounded by large thick-walled cells | - | Conjunctive tissue |
| (2) Cells of medullary rays that form part of cambial ring | - | Interfascicular cambium |
| (3) Loose parenchyma cells rupturing the epidermis and forming a lens shaped opening in bark | - | Spongy parenchyma |
| (4) Large colorless empty cells in the epidermis of grass leaves | - | Subsidiary cells |

fuEufyf[kr esds lgh ; qXe dksqfu,A

(1) f} hti=kh ifÜk; kasa & ;kSfxd Ård

laogu My eksVh fhkFÜk okyh M+h

dksf'kdkvkaI sf?kjsgksrsgS

(2) eTtk fdj kksadh dksf'kdk; atks & varji iwyh;

dSi ;e oy; ds-kkx dk dS;e

fuekZdjrh gS

(3) lgz;Ropk dksQkM+us okyh & Liath e'nwrđ

f'kfFky e'nqpkSkdk; atksNky esa ysal dsvkdj dh fNnz ukh gS

(4) ?kk I dh ifÜk; kadh káRopk & lqk; d dksf'kdk; a

esa M+h jaxghu fjDr dksf'kdk; s

Ans. (3)

Section - A (Biology : Zoology)

(2) improve micronutrient and mineral content

(3) Improve micronutrient and mineral content

(4) Improve protein content

fuEu esa dksu Qlykads k; ksQksfVZfQds'ku dk m)s'; ughaga

(1) jksxkadh izfrjkskdrk esa Iqkkj djuk

(2) foVkfue dh ek=kk esa Iqkkj djuk

(3) lw{e&iks% dka, ao [kfutadh ek=kk ealqkkj djuk

(4) izks/hu dh ek=kk esa Iqkkj djuk

Ans. (1)

152. Read the following statements.

- (a) Metagenesis is observed in Helminths
- (b) Echinoderms are triploblastic and coelomaty animals.
- (c) Round worms have organ-system level of body organization.
- (d) Comb plates present in ctenophores help in digestion
- (e) Water vascular system is characteristic of Echinoderms.

Choose the correct answer from the options given below.

- (1) (a), (b) and (c) are correct
- (2) (a), (d) and (e) are correct
- (3) (b), (c) and (e) are correct
- (4) (c), (d) and (e) are correct

fuEu dFkuksa dksi<+ka

(a) esVktusfll Ñfe;ksa ik;k tkrk gSA

(b) ,dkbukuMeZ f=kdkjd ,ao xqgh; tarqksrsgS

(c) xksyÑfe;ksa laxBu dk Lrj vax ra=k gksrk gSA

(d) VhukQksj esa mifLFkr dadr ifV-Vdk, ikpu esa lgk;rk djrh gS

(e) ty loagu dk ,dkbukuMeZ dh fof"K"Vrk gksrh gSA

fuEu fodYikalsmfpr mUkj dk p;u djks

- (1) (a), (b), (c) lggh gS
- (2) (a), (d), (e) lggh gS
- (3) (b), (c), (e) lggh gS
- (4) (c), (d), (e) lggh gS

Ans. (3)

153. Sphincter of oddi is present at

- (1) Junction of hepato-pancreatic duct and duodenum
- (2) Gastro-oesophageal junction
- (3) Junction of jejunum and duodenum
- (4) Ileo-caecal junction

vkshh vojkuh dgk mifLFkr gksrh gSA

(1) ;Ñr vXuk'k;h okfguh ,oazg kh lfk

(2) tBj&xzfldk laf/k

(3) vxz(kqnka=k ,ao xzg kh lfk

(4) f=dkar lfk

Ans. (1)

154. Which stage of meiotic prophase shows terminalisation of chiasmata as its distinctive feature?

- (1) Zygotene
- (2) Diakinesis
- (3) Pachytene
- (4) Leptotene

v/kZlw=kh iwZLFkk dh dksu lh izkoLFkk dk fof"K"V y{k k dkb,TesVk dk mikarHkou gS

(1) ;qXeie

(2) ikjxfrØe

(3) LFqyie

(4) ruqie

Ans. (2)

155. The fruit fly has 8 chromosomes ($2n$) in each cell. During interphase of Mitosis if the number of chromosomes at G_1 phase is 8, what would be the number of chromosomes after S phase? (1) 16 (2) 4 (3) 32 (4) 8

QyeD[kh dh izR;sd dksf'kdk esa 8 xq kIw=k ($2n$) gksrsgS ;fn lw=kh foHkk tu dh varjkoLFkk dh G_1 izoLFkk esa xq kIw=kka dh la[;k 8 gS s-izoLFkk ds kn xIw=kka dh la[;k D;k gksxh \

(1) 16 (2) 4 (3) 32 (4) 8

Ans. (4)

156. For effective treatment of the disease, early diagnosis and understanding its pathophysiology is very important. Which of the following molecular diagnostic techniques is very useful for early detection?

(1) Southern Blotting Technique (2) ELISA Technique
(3) Hybridization Technique (4) Western Blotting Technique

fdlh jksx ds izkko mijk dfy, bldsvkafHkd funku ,ao jskx&fO;k foKku dse>uk gqr egroizs fuEu esa dksu ih vkf od funku rduhd vkjafHkd igpku ds fy, gqr mi;ksx gS

(1) InuZ CyksfVax rduhd (2) ELISA rduhd
(3) ladj k rduhd (4) oSLVuZ CyksfVax rduhd

Ans. (2)

157. With regard to insulin choose correct options.

(a) C-peptide is not present in mature insulin
(b) The insulin produced by rDNA technology has C-peptide
(c) The pro-insulin has C-peptide
(d) A peptide and B-peptide of insulin are interconnected by disulphide bridges

Choose the correct answer from the options given below.

(1) (b) and (c) only (2) (a), (c) and (d) only
(3) (a) and (d) only (4) (b) and (d) only

balqyhu ds lanHkZsmfpr fodYi dk p;u djksA

(a) ifjiDo balqyhu esah&isIVkbM ughgksrh A
(b) vkj Mh ,u , iksfxdh smRikfnr balqyhu esah&isIVkbM gsrk gSA
(c) id~balqyhu esah&isIVkbM gsrk gSA
(d) balqyhu ds ,&isIVkbM ,o a&isIVkbM MkbIYQkbM alk&jk ijlifjd tlls gksrsgS

uhps fn, x;fodYi& smfpr mUkj dk p;u djksA

(1) dsoy (b) ,oa (c) (2) dsoy (a), (c) rFkk (d)
(3) dsoy (a) rFkk (d) (4) dsoy (b) rFkk (d)

Ans. (2)

158. Match List- I with List - II.

lwph - I dkslwph - II dsllkFk feyku djks

List- I		List- II	
(a)	Aspergillus niger	(i)	Acetic acid
(b)	Acetobacter aceti	(ii)	Lactic acid
(c)	Clostridium butylicum	(iii)	Citric acid
(d)	Lactobacillus	(iv)	Butyric acid

lwph - I		lwph - II	
(a)	,sLijftyl ukbxj	(i)	,lhfvd vEy
(b)	,lhvksqSDVj ,flvkbZ	(ii)	ySfDvd vEy
(c)	DyksLVhfM;e C;wvk;fyde	(iii)	flfv ^a d vEy
(d)	ySDVksfily	(iv)	C;wfvjd vEy

Choose the correct answer from the options given below.

fuEu fodYikalsmfpr Lrj dk p;u djks

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

Ans.

(4)

159. Match List- I with List - II.

lwph - I dkslwph - II dsllkFk feyku djks

List- I		List- II	
(a)	Metamerism	(i)	Coelenterata
(b)	Canal system	(ii)	Ctenophora
(c)	Comb plates	(iii)	Annelida
(d)	Cnidoblasts	(iv)	Porifera

lwph - I		lwph - II	
(a)	fo[kaMkoLFkk	(i)	lhysUVjsVk
(b)	uky&rzk	(ii)	VhuksQkjk
(c)	dadr ifedk	(iii)	,susfyMk
(d)	na'k dksfkd	(iv)	iksijhQjk

Choose the correct answer from the options given below.

fuEu fodYikalsmfpr Lrj dk p;u djks

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

Ans.

(2)

160. If Adenine makes 30% of the DNA molecule, what will be the percentage of Thymine, Guanine and Cytosine in it ? -

Adenine, Thymine, Guanine, Cytosine dh ek=kk 30% gS. Fkk; ehuj Xokuhu , oadkbVkslhu fd rus izfr'kr gka \

- (1) T : 20 ; G : 20 ; C : 30 (2) T : 30 ; G : 20 ; C : 20
 (3) T : 20 ; G : 25 ; C : 25 (4) T : 20 ; G : 30 ; C : 20

Ans. (2)

161. Select the favourable conditions required for the formation of oxhaemoglobin at the alveoli

- (1) Low pO₂, high pCO₂ more H⁺, higher temperature
 (2) High pO₂, high pCO₂ less H⁺, higher temperature
 (3) Low pO₂, low pCO₂ more H⁺, higher temperature
 (4) High pO₂, low pCO₂ less H⁺, lower temperature

dwfndk vksa vkDl higheks Xyksi u uuds fy, vuqdwy ifjLFkr; ksd p; u djksA

- (1) fuEu pO₂, mPp pCO₂ vf/kd H⁺, vis{kkr mPp rkieu
 (2) mPp pO₂, mPp pCO₂ fuEu H⁺, vis{kkr mPp rkieu
 (3) fuEu pO₂, fuEu pCO₂ vf/kd H⁺, vis{kkr mPp rkieu
 (4) mPp pO₂, fuEu pCO₂ fuEu H⁺, vis{kkr de rkieu

Ans. (4)

162. The organelles that are included in the endomembrane system are

- (1) Endoplasmic reticulum, Golgi complex, Lysosomes and Vacuoles
 (2) Golgi complex, Mitochondria, Ribosomes and Lysosomes
 (3) Golgi complex, Endoplasmic reticulum, Mitochondria and Lysosomes
 (4) Endoplasmic reticulum, Mitochondria, Ribosomes and Lysosomes

vari f>fydk ra=k es dkSu lsdksfkdkaX lfefyr gksrsgA

- (1) varnzO:h tkfydk] xkll'ch lfEeJ] y;udk; , oajl/kkuh
 (2) xkll'ch lfEeJ] l'kd fkd] jkb kslkse , oay;udk;
 (3) xkll'ch lfEeJ] varnzO:h tkfydk] l'kd fkd , oay;udk;
 (4) varnzO:h tkfydk] l'kd fkd] jkb kslkse , oay;udk;

Ans. (1)

166. During the process of gene amplification using PCR, if very high temperature is not maintained in the beginning, then which of the following steps of PCR will be affected first?
 (1) Extension (2) Denaturation (3) Ligation (4) Annealing

Ans. (2)

167. Identify the incorrect pair.
 (1) Toxin – Abrin
 (2) Lectins – Concanavalin A
 (3) Drugs – Ricin
 (4) Alkaloids – Codeine

Ans. (3)

168. Chronic auto immune disorder affecting neuro muscular junction leading to fatigue, weakening and paralysis of skeletal muscle is called as:
 (1) Muscular dystrophy (2) Myasthenia gravis
 (3) Gout (4) Arthritis

Ans. (2)

169. Which enzyme is responsible for the conversion of inactive fibrinogens to fibrins ?
 (1) Renin (2) Epinephrine (3) Thrombokinase (4) Thrombin

Ans. (4)

170. The centriole undergoes duplication during
 (1) Prophase (2) Metaphase (3) G₂ phase (4) S-phase

Ans. (4)

171. Which one of the following organisms bears hollow and pneumatic long bones ?
 (1) Hemidactylus (2) Macropus (3) Ornithorhynchus (4) Neophron

Ans (4)

172. Receptors for sperm binding in mammals are present on:
 (1) Vitelline membrane (2) Perivitelline space
 (3) Zona pellucida (4) Corona radiata

- (1) ihrd f>YYkh (2) ifjihrd vodk*k
 (3) tksuk is;qfIMk (4) dksjkuk jM,sVh

Ans (3)

173. A specific recognition sequence identified by endonucleases to make cuts at specific positions within the DNA is :

- (1) Okazaki sequences (2) Palindromic Nucleotide sequences
 (3) Poly (A) tail sequences (4) Degenerate primer sequence

- (1) vksdk ttdh vuqØe (2) iSyhUM*ksfed U;wDyvsklBM vuqØe
 (3) gg (A) ipNu vuqØe (4) viáflr ijEHkd vuqØe

Ans (2)

174. In a cross between a male and female, both heterozygous for sickle cell anaemia gene, what percentage of the progeny will be diseased?

- (1) 75% (2) 25% (3) 100% (4) 50%

Ans (2)

175. Which is the "Only enzyme" that has "Capability" to catalyse initiation, Elongation and Termination in the process of transcription in prokaryotes

- (1) DNA dependent RNA polymerase (2) DNA ligase
 (3) DNase (4) DNA dependent DNA polymerase

Ans (1)

176. Success entericus is referred to as :
 (1) Intestinal juice (2) Gastric juice (3) Chyme (4) Pancreatic juice

Intestinal juice

(1) Intestinal juice (2) Gastric juice (3) Chyme (4) Pancreatic juice

Ans (1)

177. Which one of the following is an example of Hormone releasing IUD ?

(1) LNG 20 (2) Cu 7 (3) Multiload 375 (4) CuT

LNG 20

(1) LNG 20 (2) Cu 7 (3) Multiload 375 (4) CuT

Ans (1)

178. Venereal diseases can spread through:

- (a) Using sterile needles
- (b) Transfusion of blood from infected person
- (c) Infected mother to foetus
- (d) Kissing
- (e) Inheritance

Choose the correct answer from the options given below.

- (1) (b), (c) and (d) only (2) (b) and (c) only
- (3) (a) and (c) only (4) (a), (b) and (c) only

(b), (c) and (d) only

(a) Using sterile needles

(b) Transfusion of blood from infected person

(c) Infected mother to foetus

(d) Kissing

(e) Inheritance

(b), (c) and (d) only

(1) (b), (c) and (d) only (2) (b) and (c) only

(3) (a) and (c) only (4) (a), (b) and (c) only

Ans (2)

179. Dobson units are used to measure thickness of:

(1) Stratosphere (2) Ozone (3) Troposphere (4) CFCs

Ozone

(1) Stratosphere (2) Ozone (3) Troposphere (4) CFCs

Ans (2)

180. Persons with 'AB' blood group are called as "Universal recipients". This is due to:

- (1) Absence of antigen A and B in plasma
- (2) Presence of antibodies, anti-A and anti-B and anti-B in on RBCs
- (3) Absence of antibodies, anti-A and anti-B, in plasma
- (4) Absence of antigens A and B on the surface of RBCs

'AB' jDr lewg ds0;fDr;kædksloZzkgh D;kædgrs gSA

- (1) lykTek esa izfrtu A ,oa B dh vuqifLFkr ds dkj k
- (2) RBCs es ,æh -A ,oa,æh -B izfrj{kh dh mifLFkr ds dkj k
- (3) lykTek esa ,æh -A ,oa,æh -B izfrj{kh dh vuqifLFkr dsdkj k
- (4) RBCs dh lrg ij izrtu A ,oaB dh vuqifLFkr ds dkj k

Ans (3)

181. Which of the following RNAs is not required for the synthesis of protein?

fuEu esa izksvhu la'y's'k k dsfy, dkSu lk RNAs vko';d ughagS

- (1) tRNA
- (2) rRNA
- (3) siRNA
- (4) mRNA

Ans (3)

182. Which of the following statements wrongly represents wrongs represents the nature of smooth muscle?

- (1) They are involuntary muscles
- (2) Communication among the cells is performed by intercalated discs
- (3) These muscles are present in the wall of blood vessels
- (4) The muscle have no striations

fuEu dFkusa esa dkSu fduh is'kh dh izfr dksvuqfpr :lk ls n'kkZrk gS

- (1) ;sUkSfPNd is'k;k gksrk gS
- (2) dksf'kdkvædse/; lapj k varfoZV fMLd }kjk gksrk gSA
- (3) ;sis'k;k jDr okfgdk dh fhkfÜk esa mifLFkr gksrk gSA
- (4) bu is'k;k eas/kkfj;k ughagksrk gSA

Ans (2)

183. Which of the following characteristics is incorrect with respect to cockroach? -

- (1) Hypopharynx lies within the cavity enclosed by the mouth parts
- (2) In females, 7th. 9th sterna together form a genital pouch.
- (3) 10th abdominal segment in both sexes, bears /pair of anal cerci.
- (4) A ring of gastric caeca is present at the Junction of midgut and hind gut

frypVVs dsla alk es dkSu lh fof'k"Vrk, vuqfpr gSA? -

- (1) v/kksxzlud eq[k Hkkkksa }kjk ukbZx;h izxqgk eas gksrk gSA
- (2) eknk eas 7th. 9th rd v/kjd feydj tufud dks"B ukrs gSA
- (3) nksuksafyaxks esa 10th [kaM esa xqnh; ywe ik;stkr gSA
- (4) e/;ka=k ,oai'pkæ=k dsaf/k LFky ij tBjh; vakuky dk ,d oy; gksrk gSA

Ans (4)

184. Which one of the following belongs to the family Muscidae?
 (1) Grasshopper (2) Cockroach (3) Housefly (4) Fire fly
 fuEu eas dkSu eflDmH dqy eas vkrk gS
 (1) fVik (2) frypèk (3) eD[kh (4) pqxuw

Ans (3)

185. Erythropoietin hormone which stimulates R.B.C. formation is produced by :
 (1) The cells of rostral adenohypophysis (2) The cells of bone marrow
 (3) Juxtglomerular cells of the kidney (4) Alpha cells of pancreas
 bfjFkziskZVU gkekS tksR.B.C. dsfuekZ k ijr djrk gSmldk mRiknu dkSu djrk gS
 (1) jksLV^ay ,fMuksgkbiksQkbfll dh dksf'kdk, (2) vflFk eTtk dh dksf'kdk,
 (3) o'Dd dh tDLVikXykesy j dksf'kdk, (4) vXuk'k; dh α- dksf'kdk,

Ans (3)

Section-II

Single Choice Type

This section contains **15 Single choice questions**. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **Only One** is correct.

bll [k M eas 15 ,dy fodYih iz'u gS iR;sd iz'u ds4 fodYi (1), (2), (3) rFkk (4) gS ftuesas flQZ,d lgh gSA

186. Match List-I with List-II

lwph-I dk lwph-II dskFk feyku djks

	List-I		List-II
(a)	Filariasis	(i)	Haemophilus influenzae
(b)	Amoebiasis	(ii)	Trichophyton
(c)	Pneumonia	(iii)	Wuchereria bancrofti
(d)	Ringworm	(iv)	Entamoeba histolytica

	lwph-I		lwph-II
(a)	Qkbyksj ,fll	(i)	ghekSY l baffyq ,jth
(b)	vehark	(ii)	V%bdk kbVkwu
(c)	U; weksf u;k	(iii)	oqpsjsfj ;k bksllVkbZ
(d)	fjaxoeZ	(iv)	,aVvehark fglVksyfvdk

Choose the correct answer from the options given below.

fuEu fodYihalsmfor mUkj dk p;u djksA

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

Ans (1)

189. Following are the statements with reference to 'lipids'.
- (a) Lipids having only single bonds are called unsaturated fatty acids.
 - (b) Lecithin is a phospholipid.
 - (c) Trihydroxy propane is glycerol.
 - (d) Palmitic acid has 20 carbon atoms including carboxyl carbon.
 - (e) Arachidonic acid has 16 carbon atoms.

Choose the correct answer from the options given below.

- (1) (c) and (d) only
- (2) (b) and (c) only
- (3) (b) and (e) only
- (4) (a) and (b) only

fyfiM lsla tkr dFku uhps fn; x; gSA

(a) ,sls fyfiM ftuesadsoy ,dy vrk alk gksrsga Ugavlar`lr olk vEy dgrs gS

(b) ysfIFfku QKWLQkfyfiM gSA

(c) V^okbgbM^okWDlh iWisu fXyljKWy gSA

(d) ikfYefVd vEy esa dk kDly dk Zu lfgr 20 dk Zu dsijek kqksrsgSA

(e) ,sjfdMksfud vEy eas 16 dk Zu ijek kqksrsgSA

fuEu fodYikalsmfpr mUkj dk p;j djka

- (1) dsoy (c) ,oa (d)
- (2) dsoy (b) ,oa (c)
- (3) dsoy (b) ,oa (e)
- (4) dsoy (a) ,oa (b)

Ans (2)

190. Assertion (A) :

A person goes to high altitude and experiences 'altitude sickness' with symptoms like breathing difficulty and heart palpitations.

Reason (R):

Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen

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

- (1) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (2) (A) is true but (R) is false
- (3) (A) is false but (R) is true
- (4) Both (A) and (R) are true and (R) is the correct explanation of (A)

dFku (A) :

t ,d O;fDr mPp raqxrk ij tkrk gS og raqxrk hekjh dsy{k k tSls lak l ysus esa dfBukbZ,oaan; dh /kM+du <rk eglwl djrk gS

dj k (R):

mPPk raqxrk ij fuEu ok; qeaMyh; nk dsdj k 'kjh dk i; kZr vkWDlh tu ughafey ikrhA

mi; dr dFkuksa ds izdk'k esa fuEu fodYikasa lslgh mUkj dk p;u djka

- (1) nksuksa (A) ,oa (R) IR; gS Sfd (R) , (A) dh mfpr O;k[k; k ugha gS
- (2) (A) IR; gS Sfd (R) vIR; gSA
- (3) (A) vIR; gS Sfd (R) IR; gSA
- (4) nksuksa (A) ,oa (R) IR; gS ,oa (R) , (A) dh mfpr O;k[k; k gS

Ans (4)

191. Match List - I with List – II

lwph - I dkslwph– II dslkFk feyku djka

	List-I		List-II
(a)	Allen's Rule	(i)	Kangaroo rat
(b)	Physiological adaptation	(ii)	Desert lizard
(c)	Behavioural adaption	(iii)	Marine fish at depth
(d)	Biochemical adaption	(iv)	Polar seal

	lwph -I		lwph -II
(a)	,syu dk fu;e	(i)	daxk :- pwgk
(b)	'kjhj fØ;kRed vuqdwyu	(ii)	e:LFkyh fnidyh
(c)	O;ogkfjd vuqdwyu	(iii)	xgjbZasleqæh eNyh
(d)	tSøjllk;fud vuqdwyu	(iv)	/kq; Hkkyw

Choose the correct answer from the options given below.

Ukhps fn, x;sfodYilæls mfpr mÜkj dk p;u djka

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

Ans (2)

192. Which one of the following statements about. Histones is wrong?

- (1) The pH of his tones is slightly acidic.
- (2) Histones are rich in amino acids – Lysine and Arginine.
- (3) Histones carry positive charge in the side chain.
- (4) Histones are organized to form a unit of 8 molecules.

fuEu esa fgLVksu dsfo"ke eas dkSu llk dFku xry gS

- (1) fgLVksu dh pH fdafr vEyh; gksrh gSA
- (2) fgLVksu esaykbfllu ,oavkftZfuu ,sehuksvEy izpqj gksrsgSA
- (3) fgLVksu dh ik'oZik'alkyk eas /kukRed vkos'k gksrk gSA
- (4) fgLVksu llaxfBu gksdj 8 v kqvkadh dh ,d bdkbZ ukrs gSA

Ans (1)

193. Statement I : The codon 'AUG' codes for methionine phenylalanin
Statement II : 'AAA' and 'AAG' both codons code for the amino acid lysine.
 In the light of the above statements, choose the correct answer from the options given below.

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

Statement I : 'AUG' codes for methionine phenylalanin

Statement II : 'AAA' and 'AAG' both codons code for the amino acid lysine.

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

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

Ans (2)

194. Match List-I with List-II.

List-I and List-II

	List-I		List-II
(a)	Scapula	(i)	Cartilaginous joints
(b)	Cranium	(ii)	Flat bone
(c)	Sternum	(iii)	Fibrous joints
(d)	Vertebral column	(iv)	Triangular flat bone

	List-I		List-II
(a)	LdSiqyk	(i)	mikLFk ; qDr tksll+
(b)	dily	(ii)	+ipVh vLFk
(c)	mjksfLFk	(iii)	js'kh ; tksll+
(d)	d'ks:d naM	(iv)	f=kHkqtkdkj piVh vLFk

Choose the correct answer from the options given Below

List-I and List-II

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

Ans (3)

195. Which of the following secretes the hormone, relaxin, during the later phase of pregnancy ?

- (1) Corpus luteum (2) Foetus
 (3) Uterus (4) Graafian follicle

- (1) i h r f i a l l (2) H k v
 (3) x H k k z ' k ; (4) x z k Q h i q v d

Ans (1)

196. Identify the types of cell junctions that help to stop the leakage of the substances across a tissue and facilitation of communication with neighbouring cells via rapid transfer of ions and molecules.

- (1) Tight junctions and Gap junctions, respectively.
 (2) Adhering junctions and Tight junctions, respectively
 (3) Adhering junctions and Gap junctions, respectively.
 (4) Gap junctions and Adhering junctions, Respective

d k s f ' k d k l a f / k ; e d k s i g p k f u , t s i n k f k k z k s A U k l s k g j f u d y u s s j k s d r h g S A , o a v ; u k s a , o a v k q v k e d s

- (1) Ø e ' k l n ' + l a f i k , o a v a r j k y h l a f i k
 (2) Ø e ' k l v i l a t h l a f i k , o a n ' + l a f i k
 (3) Ø e ' k l v i l a t h l a f i k , o a v a r j k y h l a f / k
 (4) Ø e ' k l v a r j k y h l a f / k , o a v a t h l a f i k

Ans (1)

197. Which of these not an important component of initiation of parturition in humans?

- (1) Synthesis of prostaglandins (2) Release of Oxytocin
 (3) Release of Prolactin (4) Increase in estrogen and progesterone ratio

- E k k u o e a s i z l o d s v j a d s f y , f u E u e a s d k S u e g R o i i v o ; o u g h a g S
 (1) i z k s l v k x y s a f m u d k l a ' y s ' k k (2) v k w D h v k s f l u d k e k s p u
 (3) i z k s y s f D v u d k e k s p u (4) , L V a k s t u , o a i z k s t s l v j k s u d s v u q i k r e a s o f

Ans (3)

198. Which of the following is not a step in Multiple Ovulation Embryo Transfer" Technology (MOET) ?

- (1) Cow yields about 6-8 eggs at a time
 (2) Cow is fertilized by artificial insemination
 (3) Fertilized eggs are transferred to surrogate mothers at 8-32 cell stage
 (4) Cow is administered hormone having LH like activity for super ovulation

- f u E u e a s d k S u e Y V h i y v k s o w y s ' k u , s e z ; k s v a k a l Q j r d u i d (M O E T) d k p j k u g h a g S
 (1) x k ; , d l e ; e a s y x H k x 6 - 8 v a l l s m R i U u d j r h g S A
 (2) x k ; d k s ñ f - k e o h ; Z l s p u } k j k f u " k s f p r f d ; k x ; k t k r k g S A
 (3) f u " k s f p r v a l l s 8 - 3 2 d k s f ' k d k v o l F k k e a s i z f u ; q D r e k n k e a s a l F k k u k a r f j r f d ; s t k r s g S
 (4) x k ; e a s m P P k v a m k s R i t z u d s f y , L H t S l h f Ø ; k o k y k g l e k z f n ; k t k r k g S A

Ans (4)

199. During muscular contraction which of the following events occur? "

- (a) 'H' zone disappears
- (b) 'A' band widens
- (c) 'I' band reduces in width
- (d) Myosine hydrolyzes ATP, releasing the ADP and Pi
- (e) Z-lines attached to actins are pulled inwards

Choose the correct answer from the options given below.

- (1) (a), (b), (c), (d) only
- (2) (b), (c), (d), (e) only
- (3) (b), (d), (e), (a) only
- (4) (a), (c), (d), (e) only

lks'kh l adqpu esa dkSu l h ?kVuk, gS

(a) 'H' (ks=k foyqIr gkstkrk gS

(b) 'A' S pkSl+k gkstkrk gS

(c) 'I' S dh pkSbZde gstkrh gS

(d) ek;ksflu ATP, dkstyvi?kfVy dj ADP ,oa Pi dk ekspu djrk gSA

(e) ,fDVu l sayfXur Z-j's{kk vUnj dh rjQ [khap tkrh gSA

fuEu fodYi als l gh mUk j dk p;u djksA

- (1) dsoy (a), (b), (c), (d)
- (2) dsoy (b), (c), (d), (e)
- (3) dsoy (b), (d), (e), (a)
- (4) dsoy (a), (c), (d), (e)

Ans (4)

200. The Adenosine deaminase deficiency results into:

- (1) Parkinson's disease
- (2) Digestive disorder
- (3) Addison's disease
- (4) Dysfunction of Immune system

,Mhuksflu fM,ehus t dh deh ls D;k gksrk gS

(1) ikfd l jksx

(2) ikpu fodkj

(3) ,Mhlu jksx

(4) izfrj{kh ra=k dk;Zghu gksuk

Ans (4)