

Practice Test (Level A)

Subject : **Biology**
Quarter- I (Chapters 1-4)

Time: 90min

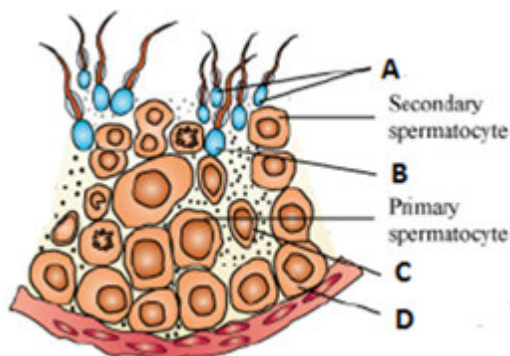
Class XII

Max. Marks: 40

Instructions:

- This question paper consists of 20 questions. You are to answer all the questions.
- Q.1-5 are very short answer type and carries 1 mark each.
- Q.6-15 are short answer type and carries 2 mark each
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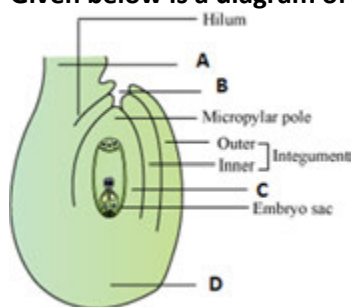
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|----|--|-----|
| 1 | How does vegetative propagation take place in plant like <i>Bryophyllum</i> ? | P7 |
| 2 | Name the two parts of a typical anther. | P21 |
| 3 | Name the primary sex organs in human male and female. | |
| 4 | Why a ban has been imposed on amniocentesis? | P58 |
| 5 | Write the functions of Leydig cells and Sertoli Cells. | P43 |
| 6 | Differentiate between GIFT and ZIFT. | P64 |
| 7 | <ol style="list-style-type: none"> Name the layers of the uterus from outside to inside. Write the name of the location where fertilization takes place in humans. | P45 |
| 8 | A typical pollen grain has two layers. Name them and mention its chemical composition. | P23 |
| 9 | Name the common asexual reproductive structure in <ol style="list-style-type: none"> Sponge <i>Penicillium</i> <i>Hydra</i> <i>Chlamydomonas</i> | P6 |
| 10 | Explain the natural methods of preventing pregnancy. | P59 |
| 11 | You are given the structure of TS of seminiferous tubule. Label the parts A to D. | P47 |



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- 12 Given below is a diagram of an anatropous ovule. Label the four parts A-D.

P25



- 13 Explain why meiosis and gametogenesis always interlinked?
- 14 What is the difference between spermatogenesis and Spermiogenesis? P47
- 15 What are the features of a wind pollinated flower? P29
- 16 Name the three phases of Menstrual cycle and write the major ovarian events during the phases. P50
- 17 What are the devices developed by plants to encourage cross pollination? P31
- 18 Draw a schematic representation of events during Oogenesis in human. P49
- 19 Explain in brief the types of endosperm formation in angiosperms. P36
- 20 a) Differentiate between pericarp and perisperm. P36
 b) Why do you say that apple is not a true fruit? P37
 c) If a farmer keeps the harvested seed of a hybrid crop for planting next year what may be the effect on the productivity and why? P39

Practice Test (Level B)

Subject : **Biology****Quarter- I (Chapters 1-4)**

Time: 90min

Class XII

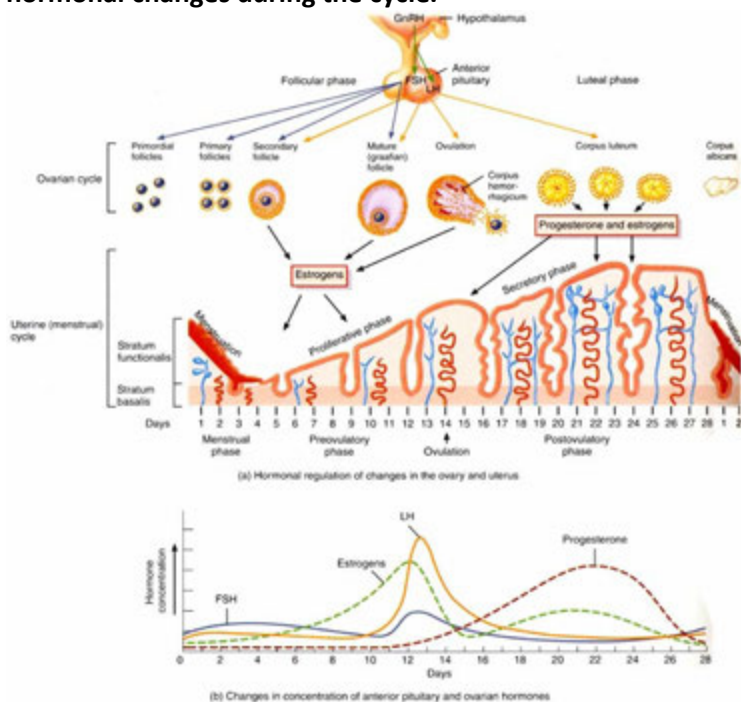
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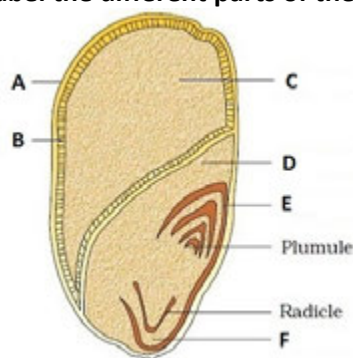
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- | | | |
|----|---|-----|
| 1 | How does the progeny formed from asexual reproduction differ from those formed by sexual reproduction? | |
| 2 | How many microsporangia are found in a typical anther? How are they arranged in the anther lobes? | P21 |
| 3 | Name the fluid filled cavity in tertiary follicle. | P48 |
| 4 | What is the statutory marriageable age for Indian couples? | P59 |
| 5 | What happens to menstrual cycle during pregnancy? | P51 |
| 6 | What role has the Government of India played in promoting awareness regarding reproductive health? | P58 |
| 7 | Write the tubules in sequence to represent the path of sperms from testis to outside the testis. | P43 |
| 8 | What makes the pollen grains resistant to strong acids and high temperatures? Which part of this layer lacks this property? | P23 |
| 9 | What is the difference between Menstrual cycle and Oestrus cycle? | P9 |
| 10 | Enlist the characteristics of an ideal contraceptive. | P59 |
| 11 | In human, once an ovum is fertilized, the second sperm is unable to fertilize the same ovum. Why? | P51 |
| 12 | A typical angiosperm embryo sac at maturity has seven nuclei and eight cells. Rectify the statement if required. Explain why. | P27 |
| 13 | Mention one important condition required for external fertilization to be successful? What is the disadvantage of this process? | P14 |

- 14 Human Placenta also acts as endocrine organ. Name the hormones it secretes. Out of the list which hormones are secreted only during pregnancy? P53
- 15 Mention the function of filiform apparatus in the embryo sac. Name the two ends of an embryo sac. P27
- 16 Study the diagram showing the phases of menstrual cycle. Explain the uterine and hormonal changes during the cycle. P50



- 17 Explain in brief the development of embryo in a dicot plant. P34
- 18 Explain the mechanism of child birth in human. P54
- 19 a) Label the different parts of the monocot seed labelled A to F. P37



- 20 a) What is apomixis? P38
- b) How are apomict seeds developed? 39
- c) How can apomict seeds be useful to farmers? 39

Practice Test (Level C)

Subject : **Biology**

Quarter- I (Chapters 1-4)

Time: 90min

Class XII

Max. Marks: 40

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- | | | |
|----|---|-----|
| 1 | Transfer of pollen grains from anther to stigma is called pollination in dioecious plants. Is the term applicable to monoecious plants also? Yes or No? | P27 |
| 2 | How are pollen sacs related to microsporangia? | P21 |
| 3 | Write the difference in function of urethra in human male and female. | |
| 4 | What are emergency contraceptives? | P61 |
| 5 | Why is the milk produced during initial days of lactation essentially fed to new born babies? | P54 |
| 6 | Classify IUDs and explain the functioning of any one of them. | P60 |
| 7 | Name the male accessory glands associated with reproductive system. Write their function. | P44 |
| 8 | In most of the angiosperms pollen grains are shed in the two celled stage. Name the cells. Why are the cells different in size? | P23 |
| 9 | What is the difference between seasonal breeders and continuous breeding mammals? | P9 |
| 10 | Explain the following processes related to ART:
a) ICSI
b) IUI | P64 |
| 11 | Differentiate between spermatogenesis (male) and Oogenesis (Female) in human. | P49 |
| 12 | What will be the ploidy and number of chromosomes of the following cells of pea plant when it is known that the male gamete has seven chromosomes?
a) Megaspore
b) Microspore mother cell | |

13



This is a photograph showing reproductive structures of *Chara*. Name the structures. Which one is male and female?

P12

14 Where in the mammary glands milk is secreted. Name the tubules in sequence to trace the path of milk to be ejected out.

P47

15 What difference will you find in a mature unfertilized embryo sac and a fertilized embryo sac in a typical angiosperm?

16 Discuss in brief the embryonic development in human up to implantation.

P53

- 17
- In which type of flowers emasculation is mandatory?
 - When should the bag opened after pollen dusted on stigma?
 - Why pollen of same species succeeds in fertilization?

P33

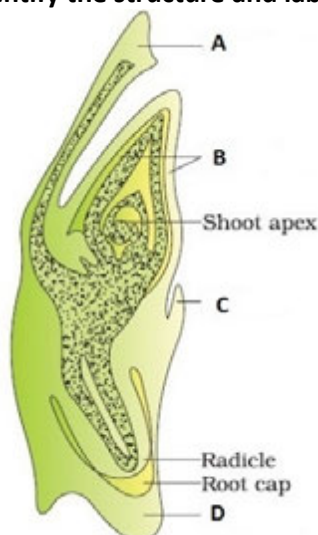
18 Match the following columns:

P54

Duration of Pregnancy	Development of human foetus
5 th month	Foetus develops limbs and digits
End of 6 th month	Hair on head appears
2 nd month end	Body covered with fine hair, eye lash formed

19 a) Identify the structure and label the parts A-D. (embryo of grass)

P35



b) Name the different shapes of embryo formed in dicot plants.

20

- What is the cause of seed dormancy?
- What advantages does seed offer to angiosperms?
- Which part of apple is edible? How is apple different from banana in fruit formation?

P38

37

Practice Test (Level A)

Subject : **Biology**

Quarter- II (Chapters 5-8)

Time: 90min

Class XII

Max. Marks: 40

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- | | | |
|----|--|------|
| 1 | What was the term used by Mendel for 'gene'? | P72 |
| 2 | How are two nucleotides linked? | P96 |
| 3 | Who proved experimentally that Life comes from pre-existing life? | P127 |
| 4 | Name a common plant which is used as drugs. Which part of the plant is used for the purpose? | P158 |
| 5 | Which disease is confirmed by Widal Test? Name the pathogen. | P146 |
| 6 | What is the difference between Co-dominance and Incomplete dominance? | |
| 7 | Explain in brief the structure of a Nucleosome. | P99 |
| 8 | Distinguish between homologous and analogous organs citing examples. | P131 |
| 9 | Differentiate between active and passive immunity. | P152 |
| 10 | Write the characteristics of Klinefelter's syndrome. Write the chromosomal composition. | P91 |
| 11 | Mention the criteria to be fulfilled by a molecule to be a genetic material. | P103 |
| 12 | Draw a flow chart showing stepwise evolution of human starting from <i>Dryopithecus</i> . | |
| 13 | What is female heterogamety. Give an example. | P86 |
| 14 | Give explanation to why the genetic codon should be a triplet. | P111 |
| 15 | Explain the terms: genetic Drift, Founder effect, Gene flow | P137 |
| 16 | Write any 6 symbols and their interpretation used in a pedigree chart | P88 |
| 17 | Draw a replication fork and explain continuous and discontinuous synthesis of DNA. | P106 |

- 18 In pea plant a Round Yellow seeded flower (RrYy) was crossed with a wrinkled Green seeded flower (rryy). Show the cross and write the phenotypic ratio. What type of cross it is? P
- 19 Write the steps in DNA fingerprinting. P122
- 20 Draw the stages (Diagrammatic) showing life cycle of *Plasmodium*. P148

Practice Test (Level B)

Subject : **Biology**

Quarter- II (Chapters 5-8)

Time: 90min

Class XII

Max. Marks: 40

Instructions:

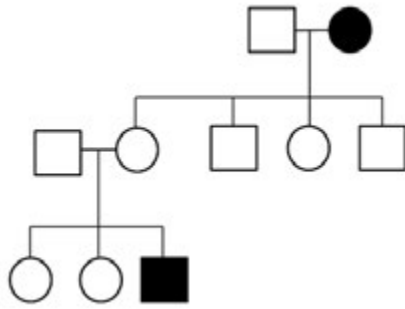
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- | | | |
|----|--|------|
| 1 | When heterozygous tall pea plants were crossed, 25% plants appeared dwarf. Why? | P73 |
| 2 | Name the Scientists who worked to determine the biochemical nature of <i>Transforming principle</i> of Griffith? | P101 |
| 3 | What is extraterrestrial concept of origin of life? | P127 |
| 4 | 'Don't die of ignorance'. Which disease does it refer to? | |
| 5 | Explain the terms: Metastasis, Contact Inhibition | P157 |
| 6 | How can you cite ABO blood grouping in human to be an example of both Multiple allelism and Co dominance simultaneously? | P77 |
| 7 | Why is DNA better option over RNA to be a genetic material? | P103 |
| 8 | Explain Oparin-Haldane's concept of origin of life. | P127 |
| 9 | Differentiate between Primary and Secondary Lymphoid organs with examples. | P154 |
| 10 | Which type of mutation results into the disease Sickle celled anemia? What causes Frame shift mutation? | P87 |
| 11 | The genetic code is unambiguous and degenerate. What does it mean? | P112 |
| 12 | Draw graphs to show operation of natural selection on different traits leading to Stabilization, Disruption and Directional change. | P136 |
| 13 | What is aneuploidy? Name any such disorder in human and mention the specific cause. | P90 |
| 14 | Explain the functioning of Lac operon when <i>E.coli</i> is cultured in medium containing lactose. | P117 |
| 15 | How has antibiotic resistance developed in bacteria? Whose theory of evolution applies on it? | P132 |
| 16 | A haemophilic man marries a normal woman has a haemophilic daughter. Explain the possibility with a cross. Name the type of Inheritance. Cite any other example. | P89 |

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17 Differentiate between Replication of DNA and Transcription.

18 Study the pedigree given below and comment whether the inheritance is



- a) Autosomal or Sex linked
- b) Dominant or Recessive trait
- c) How did you identify it?

19 Explain the methodologies applied in Human gene mapping.

P119

20 What are carcinogens? How are genes associated with cancer?

P157

Practice Test (Level C)

Subject : **Biology**

Quarter- II (Chapters 5-8)

Time: 90min

Class XII

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- | | | |
|----|---|------|
| 1 | How is segregation different from Independent assortment? | P |
| 2 | What is a coding strand in DNA Transcription process? | P108 |
| 3 | Homology is based on divergent evolution while analogy is just the opposite. Write TRUE or FALSE. | P130 |
| 4 | Name any two genera of fungi causing ring worm in human. | P149 |
| 5 | Write the common names of Heroin and Cocaine. | P |
| 6 | Explain the validity of the Principle of dominance and law of segregation in explaining an experiment involving Incomplete dominance. | P |
| 7 | How gene splicing occurs? | P110 |
| 8 | Why do you consider Darwin's finches a typical example of Adaptive radiation? | P133 |
| 9 | Differentiate between T and B lymphocyte. | P |
| 10 | How recombination frequency may be used to map the position of genes on the chromosome. Explain with an example. | P84 |
| 11 | What is a translational unit of an mRNA? Where are UTRs located? | P115 |
| 12 | How does study of comparative anatomy and morphology help in studying evolution? | P129 |
| 13 | Human Females have less chance of being hemophilic. Explain. | P89 |
| 14 | Why tRNA is called adapter molecule? | P114 |
| 15 | Explain Hardy –Weinberg principle. | P137 |
| 16 | What was the basic difference between the experiments conducted by Mendel and Morgan? Which new concepts developed after Morgan's experiment? | P |
| 17 | Describe in brief the functioning of Lac operon in the bacteria when there is no lactose in the medium? | P117 |

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- | | | |
|----|--|------|
| 18 | What is Non-disjunction? Name any two disorders in human caused due to it. Mention specific reason for the disorder. | P |
| 19 | Explain the principles of DNA fingerprinting. | P121 |
| 20 | After entering into macrophages, how does HIV establish in human body? | P156 |

Practice Test (Level A)

Subject: **Biology**

Quarter -III (Chapters 9-12)

Time: 90min

Class XII

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- | | | |
|----|--|------|
| 1 | What is Blue Revolution associated with? | P170 |
| 2 | Now a days Lipase is added to detergent formulations and is claimed to be effective for the specific purpose. What is the purpose? | P183 |
| 3 | What is a Recombinant Protein? | P203 |
| 4 | What is Biotechnology? | P193 |
| 5 | Which of the following are produced without distillation?
Whisky, Wine, Brandy, Beer, Rum | P182 |
| 6 | Write the steps in MOET. | P168 |
| | OR | |
| | What are the advantages of artificial insemination? | |
| 7 | Describe the construction of a Biogas plant. | P185 |
| 8 | How is DNA isolated from a cell? | P201 |
| 9 | How can you introduce an alien DNA in a host cell directly? | P201 |
| 10 | What is Interspecific hybridization? Name any example and how it was developed. | P168 |
| 11 | How can microbes be used as Biofertilizers? | P187 |
| 12 | What are molecular scissors? Why is plasmid DNA called vector? | P195 |
| 13 | Write a common Palindromic nucleotide sequence and cut with an appropriate Restriction enzyme. Which type of cut ends were obtained? Show. | P196 |
| 14 | If you plan to improve the nutritional quality of crop which characteristics of the crop should you target for improvement? | P176 |
| 15 | Explain in brief the secondary treatment of effluent before release into water bodies. | P184 |
| 16 | Provide a schematic diagram showing the steps in Recombinant DNA Technology | P197 |

- | | | |
|----|---|------|
| 17 | What are the three basic steps followed in genetically modifying an organism. | P195 |
| 18 | Discuss in brief the steps in amplifying a gene using PCR. | P202 |
| 19 | How does the insecticidal protein in Bt cotton kill target pest? | P208 |
| 20 | Describe in brief how Transgenic animals are beneficial to us? | P212 |

Practice Test (Level B)

Subject: **Biology**

Quarter -III (Chapters 9-12)

Time: 90min

Class XII

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- Why is inbreeding in animals necessary though it is known to cause inbreeding depression? P167
- Why is cattle dung best suited for the Biogas plant? P185
- What will happen if you use DNA polymerase in the *in vitro* DNA polymerization process? Why? P177
- Why presence of more than one recognition site in a cloning vector not desirable? P199
- What is Integrated Pest management? P178
- How are somatic hybrids produced? P177
- Explain the significance of the BOD used in Biological treatment of sewage. P184
- How a bacterial cell is made competent to take up the recombinant plasmid? P200
- What are the two core techniques which gave birth to modern Biotechnology? P193
- Fill in the blanks: P174

Crop	Variety	Resistance to Disease
Wheat	A	Leaf and stripe rust
B	Pusa swarnim	White rust
Cow pea	C	Bacterial Blight
Chilli	D	Chilli mosaic virus

- How are *Bt* powder (dried spores) effective in controlling pests? P187
- How are the DNA strands separated by gel electrophoresis visualized? P198
- Explain in brief Downstream processing of a biotech product. P204
- Write the main steps in breeding a new genetic variety of crop. P171
- Why are bottled fruit juice purchased from market clearer than homemade ones? P183
 - What is the use of activated sludge? P184

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- | | | |
|----|--|------|
| 16 | What are the features that are required to facilitate cloning into a vector? | P199 |
| 17 | Recombinant DNA technology involves several steps in specific sequence. Name them. | P201 |
| 18 | How was the first recombinant DNA constructed? What does gene cloning mean? | P194 |
| 19 | How are genes transferred into plant and animal cells from bacteria or viruses? | P200 |
| 20 | What was the problem in using insulin produced by conventional methods? How was it solved? | P211 |

Practice Test (Level C)

Subject: **Biology**

Quarter -III (Chapters 9-12)

Time: 90min

Class XII

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- What are single cell proteins? P176
- Why large holes are found in Swiss cheese? P181
- A gene is somehow transferred into an alien organism. It will naturally not multiply. Why? P194
- Name the cry genes to control cotton bollworms. P209
- What are flocs? P184
- Insect resistance in crop plants may be due to morphological, biochemical or physiological characteristics of the plant. Cite two examples in support of this statement. P175
- What is organic farming? What role does fungi play in acting as biofertilizer? P188
- How Agarose gel electrophoresis works in separating DNA fragments? P198
- Expand ELISA. Why it is used as a disease diagnostic tool? P212
- Differentiate between Out-crossing and cross-breeding. P168
- What are Baculoviruses? Why are they preferred as insecticide? P187
- With the help of an example explain how Restriction enzymes are named. P195
- Why the milk produced by the cow Rosie superior to normal cow milk for feeding human babies? P213
- What are somaclones? How are they produced? P177
- Fill in the blanks: P183

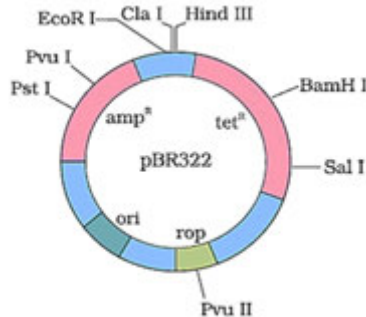
Organism	Genus	Product	Use
Bacteria	<i>Streptococcus</i>	Streptokinase	A
Fungus	B	Cyclosporin- A	C
Yeast	<i>Monascus purpureus</i>	D	Blood cholesterol lowering agent

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16 Explain a valid technique to identify recombinant bacterial colonies grown on medium in petri dishes. P200

17 Name three Restriction enzymes with the DNA sequence which it recognizes. Show the position where it acts.

18 Study the diagram of plasmid pBR322 and answer the following questions: P199



- a) What does 'rop' code for?
b) What does BamH1 and Pst1 represent?
c) If BamH1 is used to cut the alien DNA (gene of interest) then which gene of the plasmid would be affected if the alien gene is inserted in the plasmid?

19 How can gene therapy be a treatment in ADA deficient patient? P211

20 Explain how the concept of gene silencing using RNA interference can be used to protect tobacco roots from being infected by *Meloidogyne incognita*? P209

Practice Test (Level A)

Subject: ~~Biology~~

Quarter- IV (Chapters 13-16)

Time: 90min

Class XII

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|----|---|------|
| 1 | Give an example to show that when an exotic species was introduced into an area, it posed threat to native species. | P233 |
| 2 | What is 10% law? | P247 |
| 3 | Indian Biodiversity is Genetically diverse. Give an example. | P259 |
| 4 | What is Jhum cultivation? | P284 |
| 5 | Name the Hotspots in India. | P266 |
| 6 | The shape of the age pyramid shows the growth status of the population. Draw the different types of age pyramids. | P227 |
| 7 | Write the important steps in decomposition process. | P243 |
| 8 | How does Biodiversity vary with latitude and altitude? | P261 |
| 9 | Why is CNG a better fuel than convention automobile fuel? | P273 |
| 10 | Why cattle do not browse <i>Calotropis</i> growing in the abandoned fields? Name two chemical substance produced by plants for its own defense but commercially exploited by man. | P234 |
| 11 | Write the stages in succession of a pond from Phytoplankton to Forest stage. | P252 |
| 12 | Name four animals considered to have been extinct in the recent past. | P263 |
| 13 | Explain Bio-magnification of DDT in an aquatic food chain. | P276 |
| 14 | When does co evolution occur? Explain with an example. | P237 |
| 15 | Explain the role of women in conservation of Indian forests. | P284 |
| 16 | Why is the earth compared with a green house? Explain the fate of light entering into the earth. | P281 |
| 17 | Describe the causes of Biodiversity loss. | P264 |

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- 18 What is an ecological pyramid? Mention the different types. Cite examples. P248
- 19 The population density of a habitat at a given period fluctuated due to certain factors. Define them and write an equation to relate them. P228
- 20 Define the following with examples: P
- a) Commensalism
 - b) Competition
 - c) Resource Partitioning

Practice Test (Level B)

Subject: ~~Biology~~ Biology

Quarter- IV (Chapters 13-16)

Time: 90min

Class XII

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|----|---|------|
| 1 | What are conformers? Give an example. | P224 |
| 2 | Can a given species occupy more than one trophic level in the same ecosystem? If yes give example. | P249 |
| 3 | Why India is considered as mega Biodiversity country? | P261 |
| 4 | What is Joint Forest Management? | P285 |
| 5 | Write the full form of IUCN. | |
| 6 | In many cases we estimate population sizes indirectly (e.g. without counting them). Cite two such examples. | P228 |
| 7 | Pyramid of Biomass and pyramid of number may be inverted. Give examples. | P249 |
| 8 | Ex situ conservation of Biodiversity. | P267 |
| 9 | What is New auto fuel policy? | P273 |
| 10 | Many fish thrive in Antarctic water while human cannot. Why? | P226 |
| 11 | Explain the factors which affects the rate of decomposition. | P244 |
| 12 | Write the contribution of the following:
a) Paul Ehrlich
b) Alexander Von Humboldt | P |
| 13 | How does a catalytic convertor work? | P272 |
| 14 | How does organisms respond to abiotic factors when the stressful external condition is for short period only? | P224 |
| 15 | What are e-wastes? How is radioactive waste disposed? | P280 |

16	How are solid wastes disposed?	P278
17	Explain evil quartet.	P
18	A pond is a self- sustainable ecosystem. Which characteristics of a pond supports the claim.	P242
19	Differentiate between exponential and Logistic growth.	P
20	Write the type of interaction in the following:	P
	a) Cactus and moth	233
	b) Flamingoes and fishes in South American lakes	234
	c) Cuckoo and crow	236
	d) Fig and wasp	237
	e) Sea anemone and clown fish	237
	f) Ticks and dog	236

Practice Test (Level C)

Subject: ~~Biology~~

Quarter- IV (Chapters 13-16)

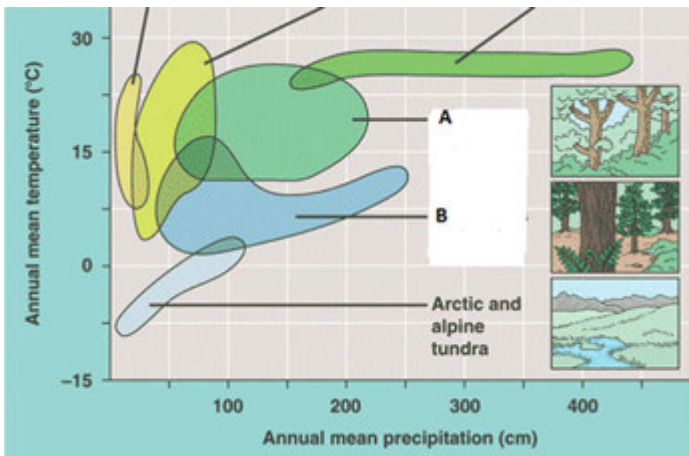
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Max. Marks: 40

Instructions:

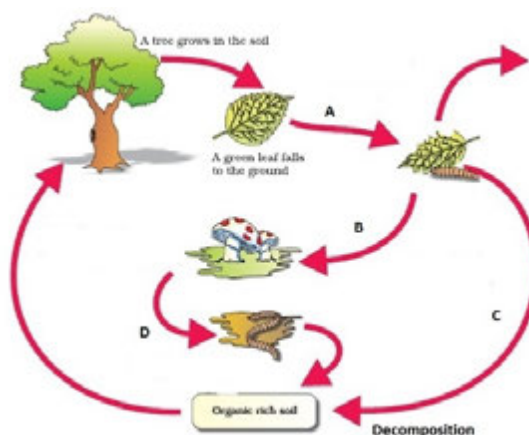
- This question paper consists of 20 questions. You are to answer all the questions.
- Q.1-5 are very short answer type and carries 1 mark each.
- Q.6-15 are short answer type and carries 2 mark each
- Q.16-20 are short answer type and carries 3 mark each

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|----|--|------|
| 1 | What is Darwinian fitness (high r value)? | P231 |
| 2 | Why pyramid of energy can never be inverted? | P249 |
| 3 | Who popularized the term 'Biodiversity'? | P258 |
| 4 | According to CPCB what is the minimum size of particulate matter which causes greatest harm to human health? Why? | P271 |
| 5 | What is sixth extinction? | P264 |
| 6 | Explain Gause's 'Competitive Exclusion Principle'. How can organisms overcome the situation? | P235 |
| 7 | Differentiate between standing crop and standing state. | P |
| 8 | Alien species invasion causes threat to indigenous species. Give two examples. | P265 |
| 9 | Explain the principle involved in working of an Electrostatic precipitator. | P271 |
| 10 |  <p>The diagram shows Biome distribution with respect to annual temperature and precipitation. Which biomes do A and B represent?</p> | P220 |

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|----|---|------|
| 11 | Explain how the laws of Thermodynamics applied in different ecosystems. | P245 |
| 12 | List three important consequences of Biodiversity loss in an area. | P264 |

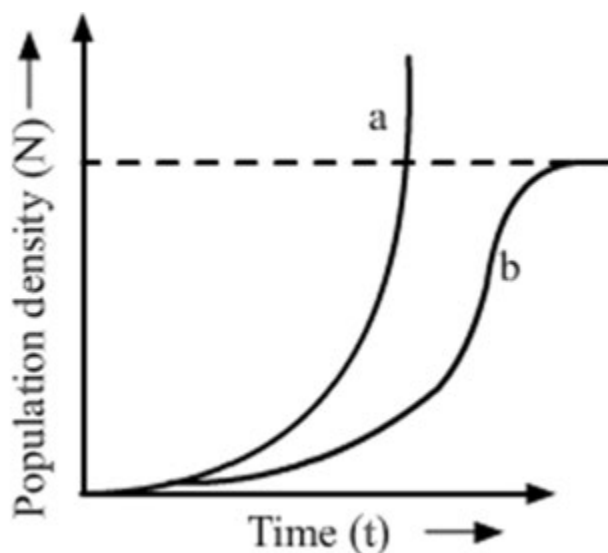
- 13 Explain how ozone depletion occurs. P282
- 14 Why small animals are rarely found in polar regions? P224
- 15 Explain the strategies taken to improve the air quality in Delhi. P273
- 16 Explain the Integrated waste water management system developed in Arcata town (California) P277
- 17 a) Explain the concept Species – Area relationship using a graph. Provide mathematical equation in support of your answer. P262

- 18 Study the diagram and describe in brief the process with special reference to points marked a-d. P244



- 19 Write brief answers: P226
- a) What is Allen's rule?
- b) How do aquatic mammals survive in polar seas?
- c) How does our body respond to Altitude sickness?

20



The diagram shows Population growth curve. P

- a) When do you obtain curve 'a'?
- b) Plot 'K' i.e. carrying capacity on this graph
- c) Write mathematical equations for curve 'a' and 'b'.