

## FINAL ANSWER KEY

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Exam:	Higher Secondary School Teacher(Junior) (Botany)
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Question1:-Which among the following is not a heterotrichous alga ?

- A:-Fritschiella
- B:-Chara
- C:-Coleochaete
- D:-Stigeoclonium

Correct Answer:- Option-B

Question2:-

Purest form of protoplasm encountered in nature in massive quantities

- A:-Slime molds
- B:-Nostoc colony
- C:-Protozoa
- D:-Bacteria

Correct Answer:- Option-A

Question3:-

Which among the following is not responsible for damping-off disease of plant seedlings ?

- A:-Rhizoctonia
- B:- Pythium
- C:-Fusarium

D:-Rhizopus

Correct Answer:- Option-D

Question4:-

Earliest diverging lineage of the extant land plants is

A:-Algae

B:-Bryophytes

C:-Pteridophytes

D:-Pteridospermales

Correct Answer:- Option-B

Question5:-

Elements of crystalline nature that are usually concentrated near septa of Ascomycetes and Deuteromycetes are called

A:-Ubisch bodies

B:-Septal bodies

C:-Woronin bodies

D:- Asco bodies

Correct Answer:- Option-C

Question6:-

An example of an Organ sui generis is

A:-Rhizoids in Riccia

B:-Scale leaves in Cycas

C:-Rhizophore in Selaginella

D:-Corlloid roots in Cycas

Correct Answer:- Option-C

Question7:-

The most ancient groups of vascular plants with living representatives

A:-Lycophytes

B:-Ginkgoales

C:-Gnetales

D:-Cycadales

Correct Answer:- Option-A

Question8:-

The thickened central part of closing bordered pits in gymnosperms is

A:-Callose

B:-Hilum

C:-Torus

D:-Trama

Correct Answer:- Option-C

Question9:-

Teichoic acid found in gram positive bacteria is a polymer of

A:-N acetyl glucosamine

B:-N acetyl muramic acid

C:-Polyglycerol phosphate

D:-Phospholipids and glycolipids

Correct Answer:- Option-C

Question10:-

Silurian period witnessed the origin of

A:-Algae & Bryophytes

B:-Bryophytes & Pteridophytes

C:-Pteridophytes & Gymnosperms

D:-Gymnosperms & Angiosperms

Correct Answer:- Option-B

Question11:-

Callose is

A:-Alpha 1, 2 glucan

B:-Beta 1, 2 glucan

C:-Alpha 1, 3 glucan

D:-Beta 1, 3 glucan

Correct Answer:- Option-D

Question12:-

Which among the following is an advanced character of xylem vessels ?

A:-Long and narrow nature

B:-Short and wide nature

C:-Scalariform perforation plate

D:-Slanted endwalls

Correct Answer:- Option-B

Question13:-

Which among the following is not a dehydrating agent ?

A:-Ethyl alcohol

B:-Acetone

C:-Tertiary butyl alcohol

D:-Xylene

Correct Answer:- Option-D

Question14:-

Mixture of substances released by the tapetum into the thecal cavity at the time of pollen development

A:-Tryphine

B:-Tryptophan

C:- Tropin

D:-Troponin

Correct Answer:- Option-A

Question15:-

Which among the following is not an example of a eurypalynous family ?

A:-Asteraceae

B:- Acanthaceae

C:-Verbenaceae

D:-Cruciferae

Correct Answer:- Option-D

Question16:-

Black pepper variety Panniyur-1 is a F<sub>1</sub> of

A:-Uthirankotaa x Banankotta

B:-Uthirankotta x Cheriya kaniyakadan

C:-Kuthiravali x Karimunda

D:- Balankotta x Karimunda

Correct Answer:- Option-B

Question17:-

Which among the following is not true with respect to the hybrid between *Raphanus sativus* and *Brassica oleracea* ?

A:-Exhibit extensive biomass heterosis

B:-Exhibit inbreeding depression

C:-Produced a sterile first-generation hybrid

D:-Produced by a Russian Geneticist

Correct Answer:- Option-B

Question18:-

Caffeine biosynthesis in plants is an example of

A:-Convergent evolution

B:-Divergent evolution

C:-Reverse evolution

D:-Coevolution

Correct Answer:- Option-A

Question19:-

Fast green is an example of

A:-Acidic stain

B:-Basic stain

C:-Neutral stain

D:-Negative stain

Correct Answer:- Option-A

Question20:-

Most abundant plant polymer after cellulose is

A:-Suberin

B:-Hemicellulose

C:-Lignin

D:-Chitin

Correct Answer:- Option-C

Question21:-

Which among the following is considered a demerit of the 'Engler and Prantl' system of classification ?

A:-Gymnosperms are placed between Monocotyledons and Dicotyledons

B:-Gymnosperms are placed among Dicotyledons

C:- Dicotyledons are placed before Monocotyledons

D:-Dicotyledons are placed after Monocotyledons

Correct Answer:- Option-D

Question22:-

Resupination is a special phenomenon exhibited by

A:-Commelinaceae

B:-Orchidaceae

C:-Cucurbitaceae

D:-Solanaceae

Correct Answer:- Option-B

Question23:-

A fruit developed from a bicarpellary, syncarpous inferior ovary is

A:-Achene

B:-Berry

C:-Cypsela

D:-Follicle

Correct Answer:- Option-C

Question24:-

Foeniculumvulgare belongs to the family

A:-Apiaceae

B:-Rutaceae

C:-Meliaceae

D:-Brassicaceae

Correct Answer:- Option-A

Question25:-

Trichopuszeylanicus is well known for its

A:-Diuretic properties

B:-Antispasmodic properties

C:-Antimalarial properties

D:-Antifatigue properties

Correct Answer:- Option-D

Question26:-

Which among the following is a relic species ?

A:-Abies balsamea

B:-Ginkgo biloba

C:-Seneciocombrensis

D:-Cycas revoluta

Correct Answer:- Option-B

Question27:-

Which of the following is considered as the warm phase of a larger phenomenon called ENSO ?

A:-El nino

B:-Global warming

C:-Greenhouse effect

D:-LaNina

Correct Answer:- Option-A

Question28:-

Which among the following is designated under the MAB programme by UNESCO ?

A:-Wildlife sanctuary

B:-National Park

C:-Community reserve

D:-Biosphere reserve

Correct Answer:- Option-D

Question29:-

Concanavalin-A originally extracted from the jack bean is a

A:- Terpene

B:-Lectin

C:-Vitamin

D:-Lipid

Correct Answer:- Option-B

Question30:-

Double citation is used when

A:-A taxon of lower rank is altered in rank but retains its name

B:-The name is published jointly by two authors

C:-The name is published jointly by more than two authors

D:-An author who validly publishes the name and ascribes it to another person

Correct Answer:- Option-D

Question31:-

Which among the following organelle is involved in Lysosome formation ?

A:-Endoplasmic reticulum

B:-Ribosomes

C:-Chloroplast

D:-Golgi bodies

Correct Answer:- Option-D

Question32:-

Heterochromatins are rich in

A:-Guanine and Cytosine

B:-Guanine only

C:-Cytosine only

D:-Adenine and Thymine

Correct Answer:- Option-D

Question33:-

Trisomy 21 is an example for

A:-Polyploidy

B:-Aneuploidy

C:-Euploidy

D:-All the above

Correct Answer:- Option-B

Question34:-

Which among the following group has ether linked membrane lipids?

A:- Eubacteria

B:-Eukaryotes

C:-Archaeobacteria

D:- Protists

Correct Answer:- Option-C

Question35:-

Repetitive nature of nucleotides in eukaryotic DNA was first discovered through

A:-Southern blotting

B:-Northern blotting

C:-C<sub>0</sub>t analysis

D:-Western blotting

Correct Answer:- Option-C

Question36:-

Pingleap atoll and associated complete achromatopsia is an example of

A:-Chromosome walking

B:-Population bottle neck

C:- Founder effect

D:-Gene silencing

Correct Answer:- Option-B

Question37:-

Celera genomics is associated with

A:-J. D. Watson

B:-FHC Crick

C:-Craig Venter

D:-Kary Mullis

Correct Answer:- Option-C

Question38:-

HG Khorana got Nobel Prize in

A:-1967

B:-1969

C:-1966

D:-1968

Correct Answer:- Option-D

Question39:-

Clover leaf model describe the structure of

A:-mRNA

B:-tRNA

C:-DNA

D:-rRNA

Correct Answer:- Option-B

Question40:-Kornberg enzyme DNA Polymerase was isolated from

A:-Thermusthermophilus

B:-E.coli

C:-Staphylococcus aureus

D:-Pneumococcus

Correct Answer:- Option-B

Question41:-

Which among the following is 5'-3' exonuclease activity ?

A:-Addition of RNA primer

B:-Addition of enzymes

C:-Removal of RNA primer

D:-Removal of DNA primer

Correct Answer:- Option-C

Question42:-

Exposure of roots to light results in greening of roots. What is the possible explanation ?

A:- Conversion of Chloroplast into Chromoplast

B:-Conversion of Amyloplasts into Chloroplast

C:-Conversion of Amyloplast into Etioplasts

D:-None of the above

Correct Answer:- Option-B

Question43:-

The key enzymes that control cell cycle and the entry of non-dividing cells to cell cycle are

A:-CDKs

B:- Phosphatases

C:-Carboxylases

D:-Proteosome

Correct Answer:- Option-A

Question44:-

The association of vesicular arbuscular mycorrhizae with plant roots facilitates, uptake of

A:-Calcium, Magnesium and Sodium

B:-Phosphorus, Zinc, Copper

C:-Iron, Manganese, Sulfur

D:-Boron, Potassium, Nitrogen

Correct Answer:- Option-B

Question45:-

Jasmonic acid is plant stress hormone synthesized from

A:-Arachidonic acid

B:-Linoleic acid

C:-Linolenic acid

D:-Citric acid

Correct Answer:- Option-C

Question46:-

Cytochrome C Oxidase is inhibited in presence of Cyanide in animals. Which is the analog of it in Plants ?

A:-Succinate dehydrogenase

B:-Cytochrome bc1 Complex

C:-Ubiquinone

D:-Alternative oxidase

Correct Answer:- Option-D

Question47:-

Gluconeogenesis is not common in plants. But it does occur in

A:-Coconut seed

B:-Castor seed

C:-Poppy seeds

D:-None of the above

Correct Answer:- Option-B

Question48:-

One Svedberg is equal to

A:- $10^{-14}$ S

B:- $10^{-15}$ S

C:- $10^{-13}$ S

D:- $10^{-16}$ S

Correct Answer:- Option-C

Question49:-

Consider a cross between two heterozygous (Aa) individuals. What are the probability of getting an aa individual in the next generation ?

A:- 1/2

B:-1/4

C:-1/3

D:-1/5

Correct Answer:- Option-B

Question50:-

A competitive inhibitor of an enzyme is

A:-Water insoluble

B:-Will always be a metal ion

C:-Have structural similarity to substrate

D:-Less reactive

Correct Answer:- Option-C

Question51:-

Which among the following statement is not true about Nucleosomal organization of Core particle in Chromosomes ?

A:-During the organization of 30 nm fibers generally 6 nucleosomes per turn organize into a two-start helix

B:- The structure of DNA can be altered in the core particle

C:-DNA is organized as a flat super helix around core particle

D:-The N-terminal histone tails in a core particle are strictly ordered and exit from the nucleosomes between turns of the DNA

Correct Answer:- Option-D

Question52:-

Which one of the following pairs are incorrect ?

A:-Fimbriae- Motility

B:-Pili- Conjugation

C:- Glycocalyx-adherence

D:-Peptidoglycan-Cell wall

Correct Answer:- Option-A

Question53:-

The decrease in quantum yield of Oxygen during Photosynthesis at Far Red light is known as

A:- Far Red drop

B:-Red Drop

C:-Visible spectrum drop

D:-Blue drop

Correct Answer:- Option-B

Question54:-

RAPD is a

A:-Sequence based methodology

B:-Restriction digestion based method

C:-Polymerase Chain Reaction based method

D:-None of the above

Correct Answer:- Option-C

Question55:-

Which among the following is correct for Somatic embryos ?

- A:-Similar to Zygotic embryos but with seed coats
- B:-Similar to zygotic embryo but without seed coats
- C:-Dissimilar to Zygotic embryos but with seed coats
- D:- Dissimilar to zygotic embryos but without seed coats

Correct Answer:- Option-B

Question56:-

siRNA and miRNA originates respectively from

- A:-Cell cytoplasm and the cell genome
- B:- Exogenous dsRNA and the cell genome
- C:- Endoplasmic reticulum and Ribosomes
- D:-None of the above

Correct Answer:- Option-B

Question57:-

Double stranded RNA is cleaved by a nuclease called as Dicer. Name the product ?

- A:-Long Interspersed RNAs
- B:-Short Interspersed RNAs
- C:-Short interfering RNAs
- D:- Long interfering RNAs

Correct Answer:- Option-C

Question58:-

Which of the following is incorrect regarding the terminologies of phylogenetic analysis ?

- A:-The connecting point where two adjacent branches join is called a node
- B:-At the apex of the branches are long lost species or sequences
- C:-Node represent an inferred ancestor of extant taxa

D:-The lines in the tree are called branches

Correct Answer:- Option-B

Question59:-

Leaves of Legumes appeared like elephant ears and flowers are with symmetrical petals. Mutations happened in which of the following are responsible for this growth ?

A:-Genes BIO and ELE1 -interact with each other and transcription factors

B:-Genes CYC and DIV

C:-Genes APH and LMV

D:-None of the above

Correct Answer:- Option-A

Question60:-

Which of the following elements are necessary to counteract damage in plants growing in conditions with high salt content ?

A:-Na

B:-Mg

C:-Si

D:-K

Correct Answer:- Option-C

Question61:-

Plant growth regulators are crucial for the development of plants. Which among the following is responsible for the development of parthenocarpic fruits in palmoil plants, which is economically advantageous ?

A:-Gibberellins

B:-Cytokinins

C:-ABA

D:-Auxin

Correct Answer:- Option-D

Question62:-

A recent study in Arabidopsis thaliana (Thalecress plant) found a newplant organ and named it as

A:-Andoecium

B:-Hypanthodiu

C:-Hypanthium

D:-Cantil

Correct Answer:- Option-D

Question63:-

Which among the following is the latest technology used in Phylogenetic analysis using genes ?

A:-RFLP

B:- RAPD

C:-Hyb-Seq

D:-SSR

Correct Answer:- Option-C

Question64:-

Which is correct with respect to Patenting process ?

A:-Extant knowledge is patentable

B:-Extant knowledge is not patentable

C:-Both are right

D:-Both are wrong

Correct Answer:- Option-B

Question65:-

An electromagnetic radiation emitted when a charged particle passes through a dielectric medium at a speed greater than the phase velocity of light in that medium is known as

A:-Cerenkov radiation

B:- Gamma radiation

C:-Beta radiation

D:-Neutron radiation

Correct Answer:- Option-A

Question66:-

Maintenance of body temperature in polar bears is mainly due to the presence of

A:- F<sub>0</sub>-F<sub>1</sub> Particle

B:-Fernandez Moran complex

C:-Myoglobin protein

D:-Uncoupling protein

Correct Answer:- Option-D

Question67:-

Which of the following methods of plant transformation can be used to introduce a gene into chloroplast genome ?

A:-Particle delivery system

B:-Agrobacterium mediated gene transfer

C:-Electroporation

D:-Permeabilization

Correct Answer:- Option-A

Question68:-

Cysteine aspartate protein kinases involved in apoptosis functions as

A:-Executioner and inflammatory

B:-Initiator and executioner

C:-Initiator and executioner and inflammatory

D:- Initiator and inflammatory

Correct Answer:- Option-B

Question69:-

The model organism to study cell lineage is

A:-Arabidopsis thaliana

B:-Drosophila melanogaster

C:-Coenorhabditis elegans

D:-None of these

Correct Answer:- Option-C

Question70:-

Protein denaturation affects only

A:-Primary structure

B:-Secondary structure

C:-Secondary and tertiary structure

D:-No effect on the structure

Correct Answer:- Option-C

Question71:-

Which of the following statement is true regarding teaching ?

A:-Standardized tests encourage broader as well as deeper learning

B:- Communicating clear learning expectations to learners enhances their learning effort and motivation

C:-Large classes often make teaching-learning more efficient and effective

D:-Using technology can itself enhance effectiveness of teaching

Correct Answer:- Option-B

Question72:-

Which among the following is not connected to heuristic method of teaching ?

A:-Discovery based learning

B:-Experience based learning

C:-Learner centred learning

D:-Passive reception learning

Correct Answer:- Option-D

Question73:-

The teaching aid which is a combination of graphic and pictorial media designed for the orderly and logical visualizing of relationship between the key facts is

A:-Chart

B:-Realia

C:-Model

D:-Map

Correct Answer:- Option-A

Question74:-

The primary purpose of ipsative assessment in the evaluation process is

A:-To compare student achievement with peers

B:- To monitor student progress and provide feedback

C:- To evaluate student's performance with their own previous performance

D:-To compare students' performance with predetermined standards

Correct Answer:- Option-C

Question75:-

Choose the odd one with respect to the characteristics of effective teaching

A:-Adaptability

B:- Reflection

C:-Apathy

D:-Inclusivity

Correct Answer:- Option-C

Question76:-

Which among the following is the most appropriate with respect to basic research ?

A:-Solution of a felt need problem

B:-Adding to the existing body of knowledge

C:-Solution of a practical problem

D:-Little concern about generalization

Correct Answer:- Option-B

Question77:-

Which of the following is a key characteristic of experimental research ?

A:-Emphasizes naturalistic observation

B:-Focuses on qualitative data

C:-Involves stratified random sampling

D:-Manipulation of variables

Correct Answer:- Option-D

Question78:-

The process of informing research participant about the major features of are search study and the nature of their involvement is known as

A:-Informed consent

B:-Debriefing

C:- Manipulation

D:-Integrity

Correct Answer:- Option-A

Question79:-

You are preparing to present your research findings at a conference. Compared to a research paper, a conference presentation should be

A:-More detailed and technical

B:- Focused on methodology rather than results

C:-More concise and visually engaging

D:-Aimed at a broader, non-specialist audience

Correct Answer:- Option-C

Question80:-

The primary purpose of including an Appendix in a research report is

A:-To include personal anecdotes and experiences

B:-To list all references used in the research

C:-To summarize the main findings of the thesis

D:-To provide supplementary data supporting main text

Correct Answer:- Option-D

Question81:-

Consider the following statements regarding the Preamble.

1. It is a part of the Constitution.

2. It can be amended.

Which is correct ?

A:-1 only

B:-2 only

C:-Both 1 and 2

D:-Neither

Correct Answer:- Option-C

Question82:-

Which of the following words were added to the Preamble by the 42<sup>nd</sup> Amendment ?

A:-Sovereign, Democratic

B:-Socialist, Secular

C:-Republic, Justice

D:-Liberty, Equality

Correct Answer:- Option-B

Question83:-

High Court judges are appointed by

A:- President

B:-Governor

C:-Parliament

D:-Chief Minister

Correct Answer:- Option-A

Question84:-

1. UPSC - Recruitment
2. EC - Elections

A:-Both correct

B:-Only 1 is correct

C:- Only 2 is correct

D:-None

Correct Answer:- Option-A

Question85:-

Which all are Emergency provisions ?

1. National Emergency
2. State Emergency
3. Financial Emergency

A:-1 & 2

B:-2 & 3

C:-All

D:-None

Correct Answer:- Option-C

Question86:-

Information Commission ensures

A:-Transparency

B:-Taxation

C:-Elections

D:-Judiciary

Correct Answer:- Option-A

Question87:-

Which list has Residuary powers ?

A:-Union

B:-State

C:-Concurrent

D:-None

Correct Answer:- Option-D

Question88:-

Social welfare programmes aim at

A:-Growth only

B:-Equity

C:-Tax

D:-Judiciary

Correct Answer:- Option-B

Question89:-

1. Preamble is enforceable.
2. It guides interpretation.

A:-1 only

B:-2 only

C:- Both

D:-None

Correct Answer:- Option-B

Question90:-

Which is a welfare programme ?

A:-RTI

B:-MNREGA

C:-UPSC

D:-EC

Correct Answer:- Option-B

Question91:-

Where did Ayyankali establish a school ?

A:-Mayannur

B:-Kanjur

C:-Venganoor

D:-Paravur

Correct Answer:- Option-C

Question92:-

Who first translated Buddhas 'Dhammapada' from Pali to Malayalam ?

A:-Muloor Sahodaran

B:-Vaikunda Swami

C:-Sahodaran Ayyappan

D:-Chattampi Swami

Correct Answer:- **Question Cancelled**

Question93:-

What is the book written by Nanu Asan in 1914 ?

A:-Jathikummi

B:-Veenapooov

C:-Jathi Nirnayam

D:-Nalini

Correct Answer:- Option-C

Question94:-

Who was the woman MLA elected from the Malabar Urban Constituency in the Madras State in 1936 ?

A:- Parvathi Nethyaramma

B:-A. V. Kuttimalu Amma

C:-Akkamma Cheriyan

D:-Annie Thayyil

Correct Answer:- Option-B

Question95:-

Who was the first Nambuthiri woman who discarded the Ghosha (Veil) and spoke on public platform in 1930 ?

A:-Parvathi Manazhi

B:-Devaki Nilayamkode

C:-Arya Pallam

D:-Parvathi Nenmenimangalam

Correct Answer:- Option-A

Question96:-

Which conference did EMS declare Nambuthri should be made human ?

A:-1943 Kannur

B:-1945 Ongallur

C:-1946 Punnappa

D:-1934 Malabar

Correct Answer:- Option-B

Question97:-

The Book Vedathikara Nirupanam was written by whom ?

A:-Ayyankali

B:-V. T. Battathirippad

C:-Vagbadananda

D:-Chattampi Swami

Correct Answer:- Option-D

Question98:-

Which was the philosophical poetry written by Sree Narayana Guru in 1897 ?

A:-Kathaghosh

B:-Atmopadesa Satakam

C:-Sivananda Lahari

D:-Lalitha Sarith Sagar

Correct Answer:- Option-B

Question99:-

Who is known as Kerala Gandhi ?

A:- A. K. Gopalan

B:-K. P. Padmanabha Menon

C:- C. Kesavan

D:-K. Kelappan

Correct Answer:- Option-D

Question100:-

Vaikunda Swami was born in which family

A:-Nambuthiri

B:- Channar

C:-Nair

D:-Baniya

Correct Answer:- Option-B