

SET-“X”

(Total No. of printed pages : 20)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

(PG-EE-2022)

LIFE SCIENCES

11981

Code

A

Sr. No. _____

Time : 1¼ Hours

Total Questions : 100

Max. Marks : 100

Roll No. _____ (in figure) _____ (in words)

Name : _____ Father's Name : _____

Mother's Name : _____ Date of Examination : _____

(Signature of the candidate)

(Signature of the Invigilator)

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Question No.	Questions
1.	<p>Agar-agar powder used in tissue culture media is obtained from which of the following ?</p> <p>(1) Gonium (2) Gracilaria (3) Glomus (4) Gigaspora</p>
2.	<p>The site of nitrogen fixation in the cyanobacterium Nostoc is located in :</p> <p>(1) Thylakoids (2) Heterocyst (3) Vegetative Cell (4) Cytoplasm</p>
3.	<p>Which of the following algae shows parasitism ?</p> <p>(1) Oedogonium (2) Ulothrix (3) Cephaluros (4) Sargassum</p>
4.	<p>Sexual reproduction is found in all the classes of algae except</p> <p>(1) Cyanophyceae (2) Chlorophyceae (3) Rhodophyceae (4) Phaeophyceae</p>
5.	<p>Which of the following is the genetic material in Cauliflower mosaic virus ?</p> <p>(1) RNA (2) DNA (3) Both RNA and DNA (4) None of these</p>
6.	<p>The rust <i>Puccinia graminis tritici</i> is :</p> <p>(1) Macrocytic, heteroecious (2) Macrocytic autoecious (3) Microcytic, heteroecious (4) Microcytic, autoecious</p>

Question No.	Questions
13.	<p>In the members of which order archegonia are produced in roofed chambers ?</p> <p>(1) Sphaerocarpales (2) Marchantiales (3) Anthocertales (4) Jungermanniales</p>
14.	<p>Sporophyte is physically and physiologically dependent on gametophyte in which of the following division of plants ?</p> <p>(1) Thallophyta (2) Bryophyta (3) Pteridophyta (4) Spermatophyta</p>
15.	<p>The type of stele, in which a continuous ring of xylem surrounds the pith in the centre, is known as :</p> <p>(1) Plectostele (2) Actinostele (3) Siphonostele (4) Polystele</p>
16.	<p>Night blindness and Xerophthalmia are caused by the deficiency of which of the following ?</p> <p>(1) Vitamin B (2) Vitamin C (3) Vitamin A (4) Vitamin D</p>
17.	<p>When the entire sporangium develops from a single cell initial then the development is known as :</p> <p>(1) Eusporangiate type (2) Leptosporangiate type (3) Acrogynous type (4) Anacrogynous type</p>

Question No.	Questions
18.	<p>Largest male gamete in plants is found in which of the following ?</p> <p>(1) Ephedra (2) Cycas (3) Equisetum (4) Funaria</p>
19.	<p>Which of the following gymnosperms is the source of anticancerous drug ?</p> <p>(1) Pinus (2) Cycas (3) Ephedra (4) Taxus</p>
20.	<p>Chilgoza is obtained from which of the following ?</p> <p>(1) Pinus excelsa (2) Pinus gerardiana (3) Abies pindrow (4) Cedrus deodara</p>
21.	<p>Who authored the book <i>Die Natürlichen Pflanzenfamilien</i> ?</p> <p>(1) Thorne (2) Takhtajan (3) Cronquist (4) Engler and Prantl</p>
22.	<p>Which of the following is a specimen duplicate of the holotype from the same collection of the same date and same locality ?</p> <p>(1) Isotype (2) Paratype (3) Lectotype (4) Neotype</p>
23.	<p>According to ICBN, which of the following is the starting date for a valid name of an angiosperm ?</p> <p>(1) 1st May 1753 (2) 21st June 1853 (3) 31st July 1853 (4) 21st June 1753</p>

Question No.	Questions
30.	Which of the following are the excretory units of annelids ? (1) Uniferous tubules (2) Gills (3) Nephridia (4) Nephrostomes
31.	Which of the following is the first body segment of earthworm ? (1) Protostomium (2) Peristome (3) Protostome (4) Peristomium
32.	Which of the following plant yields the drug used in the treatment of hypertension ? (1) Rauwolfia (2) Plantago (3) Cinchona (4) Vinca
33.	When the two ecosystems overlap each other, the area is called as : (1) Habitat (2) Niche (3) Ecotype (4) Ecotone
34.	Who described double fertilization in angiosperms ? (1) Nawaschin (2) Strasburger (3) Nageli (4) Schwann
35.	Pollinia are found in which of the following family ? (1) Gramineae (2) Orchidaceae (3) Cyperaceae (4) Solanaceae
36.	Bicollateral bundles are found in which of the following family ? (1) Combretaceae (2) Cucurbitaceae (3) Commelinaceae (4) Brassicaceae

Question No.	Questions
53.	Restoring balance of contaminants in the environment using plants is called as : (1) Phytomorphology (2) Phytohormones (3) Photosynthesis (4) Phytoremediation
54.	Ernst Meyer is known for which of the following ? (1) Taxonomic classification (2) Biological species concept (3) Five kingdom classification (4) Evolutionary history
55.	The pyramid of energy in a pond ecosystem is always : (1) linear (2) upright (3) irregular (4) inverted
56.	A high BOD value in aquatic environment is indicative of which of the following ? (1) a pollution free system (2) a highly polluted system due to excess of nutrients (3) a highly polluted system due to abundant heterotrophs (4) a highly pure water with abundance of autotrophs
57.	Which part of the blood is affected in sickle cell disease ? (1) White blood cells (2) Hemoglobin (3) Red blood cell membrane (4) Platelets

Question No.	Questions
58.	<p>Which of the following explain genetic disorders like alkaptonuria and albinism ?</p> <p>(1) Recessive inheritance (2) Dominant genes (3) X chromosomes (4) Y chromosomes</p>
59.	<p>Which of the following is called the sex-linked disease ?</p> <p>(1) Leukemia (2) Alzheimer's (3) Malignancy (4) Colour blindness</p>
60.	<p>Which of the following is not true for prokaryotic cells ?</p> <p>(1) Do not have membranous organelles (2) Is covered with a gelatinous sheath (3) Have a ribosome size of 70 S (4) Cell organelles are surrounded by membrane</p>
61.	<p>Which of the following is a hexaploid ?</p> <p>(1) Rice (2) Maize (3) Cotton (4) Oat</p>
62.	<p>The interchange of parts between non-homologous chromosomes is called as :</p> <p>(1) Duplication (2) Translocation (3) Inversion (4) Deletion</p>
63.	<p>Extrachromosomal inheritance commonly occur in which of the following ?</p> <p>(1) Nucleus (2) Cytoplasmic organelles (3) Ribosomes (4) Cell membrane</p>



Question No.	Questions
69.	<p>Mendel's Law of independent assortment holds good for genes situated on which of the following ?</p> <p>(1) non-homologous chromosomes (2) homologous chromosomes (3) extra nuclear genetic element (4) same chromosome</p>
70.	<p>F₂ generation in a Mendelian cross showed that both genotypic and phenotypic ratios are same as 1:2:1. It represents a case of _____</p> <p>(1) Monohybrid cross with complete dominance (2) Monohybrid cross with incomplete dominance (3) Codominance (4) Dihybrid cross</p>
71.	<p>During DNA replication, Okazaki fragments are used to elongate _____</p> <p>(1) The leading strand towards replication fork (2) The lagging strand towards replication fork (3) The leading strand away from replication fork (4) The lagging strand away from the replication fork</p>
72.	<p>Which of the following is not applicable to RNA ?</p> <p>(1) Complementary base pairing (2) 5 phosphoryl and 3 hydroxyl ends (3) Heterocyclic nitrogenous bases (4) Chargaff's rule</p>



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78.	<p>Pleiotropy occurs when a gene has :</p> <p>(1) Complementary genes elsewhere (2) A small effect on one trait (3) Reversible effect on the phenotype, depending on age (4) Many effects on the phenotype</p>
79.	<p>Chimeras are formed due to which of the following ?</p> <p>(1) Somatic mutations (2) Reverse mutations (3) Lethal mutations (4) Pleiotropic mutations</p>
80.	<p>In chloroplast, Chlorophyll is present in which of the following ?</p> <p>(1) Outer membrane (2) Inner membrane (3) Thylakoids (4) Stroma</p>
81.	<p>Oncogenes are the cancer causing genes in the cells but they do not express usually because of the presence of which of the following ?</p> <p>(1) Proto-oncogenes (2) Tumour promoters (3) Tumour suppressor genes (4) Transposons</p>
82.	<p>Botulism caused by <i>Clostridium botulinum</i> affects which of the following ?</p> <p>(1) Lymph glands (2) Neuromuscular junction (3) Spleen (4) Intestine</p>
83.	<p>Muscle fatigue sets in due to the non-availability of which of the following ?</p> <p>(1) Calcium (2) ATP (3) Acting binding sites (4) Mg factor</p>



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89.	<p>Osteoblasts are better defined by which of the following ?</p> <p>(1) Osteoblasts are the stem cells that give rise to chondrocytes. (2) Osteoblasts are the proliferating precursors of the chondrocytes. (3) Osteoblasts are enlarged chondrocytes present in the hypertrophic zone of the growth plate. (4) Osteoblasts are bone-forming cells that derive from stem cells in the bone marrow and therefore have no lineage relationship to chondrocytes.</p>
90.	<p>Which of the following is produced with the combination of apoenzyme and coenzyme ?</p> <p>(1) Holoenzyme (2) Enzyme substrate complex (3) Prosthetic group (4) Enzyme product complex</p>
91.	<p>Blocking of enzyme action by blocking its active sites is known as :</p> <p>(1) Allosteric inhibition (2) Feedback inhibition (3) Competitive inhibition (4) Non-competitive inhibition</p>
92.	<p>The semiconservative mode-of DNA replication experiment was first proved by which of the following ?</p> <p>(1) Maselson and Stahl (2) Urey and Miller (3) Watson and Crick (4) Benthom and Hooker</p>
93.	<p>Which international treaty was signed in year 1987 to control the emission of ozone depleting substances ?</p> <p>(1) Rio Declaration (2) Montreal Protocol (3) Stockholm Declaration (4) Kyoto Protocol</p>



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100.	<p>The pesticides having very low biodegradation and strong affinity for fatty tissues are :</p> <p>(1) Organophosphates (2) Triazines (3) Organochlorines (4) Pyrethroids</p>



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7.	Kappa particles are present in : (1) Plastids (2) Mitochondria (3) Plasmids (4) Cytoplasm
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11.	The highest concentration of auxin in plants is found in the (1) Internodes (2) Growing tips of the plant (3) Dead cells of the plant (4) Roots of plants

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44.	<p>T-lymphocytes originate from which of the following ?</p> <p>(1) liver (2) bone marrow (3) thymus (4) gall bladder</p>
45.	<p>The formation of two species from one ancestral species is known as :</p> <p>(1) allopatry (2) phyletic evolution (3) convergent evolution (4) divergent evolution</p>
46.	<p>To which of the following the codon, AUG belongs ?</p> <p>(1) Amber (2) Ochre (3) Initiation codon (4) Termination codon</p>
47.	<p>Transfer of pollen grains from the anther to the stigma of another flower of the same plant in known as :</p> <p>(1) Xenogamy (2) Geitonogamy (3) Clietogamy (4) Chasmogamy</p>
48.	<p>Which of the following is NOT correctly matched ?</p> <p>(1) Sugarcane - Sciropophaga nivella (2) Wheat - Sesamia inferens (3) Rice - Diceladispera armigera (4) Cotton - Tetranychus tecarius</p>
49.	<p>Which of the following has anomalous secondary growth ?</p> <p>(1) Sunflower (2) Hordeum (3) Draçaena (4) Cucurbita</p>

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54.	<p>In a family of four including a normal mother, a normal father, a color blind son and a normal son, who do you think has the defective X gene other than the affected son ?</p> <p>(1) The mother (2) The father (3) The normal son (4) The effected son only</p>

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60.	<p>F_2 generation in a Mendelian cross showed that both genotypic and phenotypic ratios are same as 1:2:1. It represents a case of _____</p> <p>(1) Monohybrid cross with complete dominance (2) Monohybrid cross with incomplete dominance (3) Codominance (4) Dihybrid cross</p>
61.	<p>Which of the following is the first body segment of earthworm ?</p> <p>(1) Protostomium (2) Peristome (3) Protostome (4) Peristomium</p>
62.	<p>Which of the following plant yields the drug used in the treatment of hypertension ?</p> <p>(1) Rauvolfia (2) Plantago (3) Cinchona (4) Vinca</p>
63.	<p>When the two ecosystems overlap each other, the area is called as :</p> <p>(1) Habitat (2) Niche (3) Ecotype (4) Ecotone</p>
64.	<p>Who described double fertilization in angiosperms ?</p> <p>(1) Nawaschin (2) Strasburger (3) Nageli (4) Schwann</p>
65.	<p>Pollinia are found in which of the following family ?</p> <p>(1) Gramineae (2) Orchidaceae (3) Cyperaceae (4) Solanaceae</p>

Question No.	Questions
66.	Bicollateral bundles are found in which of the following family ? (1) Combretaceae (2) Cucurbitaceae (3) Commelinaceae (4) Brassicaceae
67.	Which of the following is a vessel less angiosperm ? : (1) Digitalis (2) Degenaria (3) Desmodium (4) Dodonea
68.	Maximum stratification of plants is found in : (1) Temperate forests (2) Tropical rain forests (3) Subtropical forests (4) Alpine forests
69.	Which of the following characteristic feature is common to bryophytes, pteridophytes and gymnosperms ? (1) Haplodiplontic lifecycle (2) Presence of vascular tissue (3) Presence of Archegonia (4) Dominant sprophytic phase in the life cycle
70.	Which of the following terrestrial biome has the highest diversity of plant and animal life ? (1) Tropical savanna (2) Boreal forest (3) Tropical rain forest (4) Tundra

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71.	<p>The one-gene-one enzyme hypothesis was proposed by :</p> <p>(1) Beadle and Tatum (2) Watson and Crick</p> <p>(3) Norman Borlaug (4) Singer and Nicolson</p>
72.	<p>A triplet code was first suggested by which of the following ?</p> <p>(1) Weber (1968) (2) Jacob and Monad (1961)</p> <p>(3) Allet (1975) (4) Gamow (1954)</p>
73.	<p>A piece of DNA molecule that can serve as a carrier for the genes to be cloned is called as a :</p> <p>(1) Virus (2) Vector</p> <p>(3) DNAjunk (4) Gene factor</p>
74.	<p>The capacity of mature cells, when freed from plant body, to reorganize themselves into new individuals is known as :</p> <p>(1) Apomixis (2) Parthenogenesis</p> <p>(3) Totipotency (4) Somatic Hybridization</p>
75.	<p>The importance of tissue culture in studying plant morphogenesis was first anticipated by :</p> <p>(1) Haberlandt (2) Kotte</p> <p>(3) Robbins (4) White</p>
76.	<p>Which of the following enzymes is used in PCR reaction ?</p> <p>(1) Taq Polymerase (2) RNA Polymerase</p> <p>(3) Ribonuclease (4) Endonuclease</p>

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77.	<p>Which of the following is a plant useful in the study of plant genomes because of its small genome size ?</p> <p>(1) Avena sativa (2) Petunia porodii (3) Solanum nigrum (4) Arabidopsis thaliana</p>
78.	<p>Which of the following is the function of telomere ?</p> <p>(1) Movement of chromosomes (2) Stabilisation and protection of chromosomes (3) Separation of chromosomes (4) None of these</p>
79.	<p>If in a given sample, DNA thymine is 40% and cytosine is 10%, what will be the percentage of adenine ?</p> <p>(1) 40 (2) 80 (3) 10 (4) 90</p>
80.	<p>Where does the Calvin cycle take place ?</p> <p>(1) Stroma of the chloroplast (2) Thylakoid membrane (3) Cytoplasm surrounding the chloroplast (4) Chlorophyll molecule</p>
81.	<p>Who authored the book <i>Die Naturlichen Pflanzenfamilien</i> ?</p> <p>(1) Thorne (2) Takhtajan (3) Cronquist (4) Engler and Prantl</p>

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87.	<p>Which of the following does not belong to phylum Mollusca ?</p> <p>(1) Decapoda (2) Gastropoda</p> <p>(3) Cephalopoda (4) Monopacophora</p>
88.	<p>The <i>Periplaneta</i> belongs to which of the following phyla</p> <p>(1) Porifera (2) Annelida</p> <p>(3) Mollusca (4) Arthropoda</p>
89.	<p>Insects, which feed on one type of food are called as :</p> <p>(1) Polyphagous (2) Monophagous</p> <p>(3) Entomophagy (4) Autotrophs</p>
90.	<p>Which of the following are the excretory units of annelids ?</p> <p>(1) Uniferous tubules (2) Gills</p> <p>(3) Nephridia (4) Nephrostomes</p>
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93.	Which of the following algae shows parasitism ? (1) Oedogonium (2) Ulothrix (3) Cephaleuros (4) Sargassum
94.	Sexual reproduction is found in all the classes of algae except (1) Cyanophyceae (2) Chlorophyceae (3) Rhodophyceae (4) Phaeophyceae
95.	Which of the following is the genetic material in Cauliflower mosaic virus ? (1) RNA (2) DNA (3) Both RNA and DNA (4) None of these
96.	The rust <i>Puccinia graminis tritici</i> is : (1) Macrocytic, heteroecious (2) Macrocytic autoecious (3) Microcytic, heteroecious (4) Microcytic, autoecious
97.	Loose smut of wheat is caused by which of the following ? (1) Aspergillus (2) Puccinia (3) Urocystis (4) Ustilago
98.	Which of the following is one of the common fungal disease of man ? (1) Cholera (2) Typhoid (3) Plague (4) Ringworm

SET-"X"

(Total No. of printed pages : 20)

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(PG-EE-2022)

LIFE SCIENCES

11983

Sr. No. _____

Code

C

Time : 1¼ Hours

Total Questions : 100

Max. Marks : 100

Roll No. _____ (in figure) _____ (in words)

Name : _____ Father's Name : _____

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(Signature of the candidate)

(Signature of the Invigilator)

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Question No.	Questions
1.	<p>The one-gene-one enzyme hypothesis was proposed by :</p> <p>(1) Beadle and Tatum (2) Watson and Crick (3) Norman Borlaug (4) Singer and Nicolson</p>
2.	<p>A triplet code was first suggested by which of the following ?</p> <p>(1) Weber (1968) (2) Jacob and Monod (1961) (3) Allet (1975) (4) Gamow (1954)</p>
3.	<p>A piece of DNA molecule that can serve as a carrier for the genes to be cloned is called as a :</p> <p>(1) Virus (2) Vector (3) DNA junk (4) Gene factor</p>
4.	<p>The capacity of mature cells, when freed from plant body, to reorganize themselves into new individuals is known as :</p> <p>(1) Apomixis (2) Parthenogenesis (3) Totipotency (4) Somatic Hybridization</p>
5.	<p>The importance of tissue culture in studying plant morphogenesis was first anticipated by :</p> <p>(1) Haberlandt (2) Kotte (3) Robbins (4) White</p>
6.	<p>Which of the following enzymes is used in PCR reaction ?</p> <p>(1) Taq Polymerase (2) RNA Polymerase (3) Ribonuclease (4) Endonuclease</p>

Question No.	Questions
7.	<p>Which of the following is a plant useful in the study of plant genomes because of its small genome size ?</p> <p>(1) <i>Avena sativa</i> (2) <i>Petunia prodii</i> (3) <i>Solanum nigrum</i> (4) <i>Arabidopsis thaliana</i></p>
8.	<p>Which of the following is the function of telomere ?</p> <p>(1) Movement of chromosomes (2) Stabilisation and protection of chromosomes (3) Separation of chromosomes (4) None of these</p>
9.	<p>If in a given sample, DNA thymine is 40% and cytosine is 10%, what will be the percentage of adenine ?</p> <p>(1) 40 (2) 80 (3) 10 (4) 90</p>
10.	<p>Where does the Calvin cycle take place ?</p> <p>(1) Stroma of the chloroplast (2) Thylakoid membrane (3) Cytoplasm surrounding the chloroplast (4) Chlorophyll molecule</p>
11.	<p>Who authored the book <i>Die Natürlichen Pflanzenfamilien</i> ?</p> <p>(1) Thorne (2) Takhtajan (3) Cronquist (4) Engler and Prantl</p>

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Question No.	Questions
17.	Which of the following does not belong to phylum Mollusca ? (1) Decapoda (2) Gastropoda (3) Cephalopoda (4) Monopacophora
18.	The <i>Periplaneta</i> belongs to which of the following phyla. (1) Porifera (2) Annelida (3) Mollusca (4) Arthropoda
19.	Insects, which feed on one type of food are called as : (1) Polyphagous (2) Monophagous (3) Entomophagy (4) Autotrophs
20.	Which of the following are the excretory units of annelids ? (1) Uniferous tubules (2) Gills (3) Nephridia (4) Nephrostomes
21.	Agar-agar powder used in tissue culture media is obtained from which of the following ? (1) Gonium (2) Gracilaria (3) Glomus (4) Gigaspora
22.	The site of nitrogen fixation in the cyanobacterium Nostoc is located in : (1) Thylakoids (2) Heterocyst (3) Vegetative Cell (4) Cytoplasm

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Question No.	Questions
29.	<p>Splitting of dinitrogen molecule into free nitrogen atom in biological N_2 fixation is carried out by which of the following ?</p> <p>(1) Hydrogenase (2) Dinitrogenase (3) Nitrogenase (4) Catalase</p>
30.	<p>In which group of plants, leaf performs dual function of photosynthesis and reproduction ?</p> <p>(1) Bryophyta (2) Pteridophyta (3) Gymnosperms (4) Angiosperms</p>
31.	<p>Blocking of enzyme action by blocking its active sites is known as :</p> <p>(1) Allosteric inhibition (2) Feedback inhibition (3) Competitive inhibition (4) Non-competitive inhibition</p>
32.	<p>The semiconservative mode-of DNA replication experiment was first proved by which of the following ?</p> <p>(1) Maselson and Stahl (2) Urey and Miller (3) Watson and Crick (4) Benthom and Hooker</p>
33.	<p>Which international treaty was signed in year 1987 to control the emission of ozone depleting substances ?</p> <p>(1) Rio Declaration (2) Montreal Protocol (3) Stockholm Declaration (4) Kyoto Protocol</p>
34.	<p>T-lymphocytes originate from which of the following ?</p> <p>(1) liver (2) bone marrow (3) thymus (4) gall bladder</p>

Question No.	Questions
41.	<p>Which of the following is a hexaploid ?</p> <p>(1) Rice (2) Maize (3) Cotton (4) Oat</p>
42.	<p>The interchange of parts between non-homologous chromosomes is called as :</p> <p>(1) Duplication (2) Translocation (3) Inversion (4) Deletion</p>
43.	<p>Extrachromosomal inheritance commonly occur in which of the following ?</p> <p>(1) Nucleus (2) Cytoplasmic organelles (3) Ribosomes (4) Cell membrane</p>
44.	<p>In a family of four including a normal mother, a normal father, a color blind son and a normal son, who do you think has the defective X gene other than the affected son ?</p> <p>(1) The mother (2) The father (3) The normal son (4) The effected son only</p>
45.	<p>Which of the following is wrong ?</p> <p>(1) Y chromosome lacks dosage compensation (2) X linked genes are inherited as criss cross (3) Y linked gene like haemophilia passes from father to son (4) X linked recessive genes are carried by females</p>

Question No.	Questions
46.	<p>A turner child born to normal parents is haemophilic. Where did the non-disjunction occur ?</p> <p>(1) Mother (2) Father (3) Zygote (4) Grand mother</p>
47.	<p>Which of the following is the site of ribosomes synthesis ?</p> <p>(1) Nucleolus (2) Nucleoplasm (3) Chromatid (4) Nuclear membrane</p>
48.	<p>In a monohybrid cross between two heterozygous individuals, percentage of pure homozygous individuals obtained in F_1 generation will be :</p> <p>(1) 25% (2) 50% (3) 75% (4) 100%</p>
49.	<p>Mendel's Law of independent assortment holds good for genes situated on which of the following ?</p> <p>(1) non-homologous chromosomes (2) homologous chromosomes (3) extra nuclear genetic element (4) same chromosome</p>
50.	<p>F_2 generation in a Mendelian cross showed that both genotypic and phenotypic ratios are same as 1:2:1. It represents a case of _____</p> <p>(1) Monohybrid cross with complete dominance (2) Monohybrid cross with incomplete dominance (3) Codominance (4) Dihybrid cross</p>

Question No.	Questions
51.	Which of the following is the first body segment of earthworm ? (1) Protostomium (2) Peristome (3) Protostome (4) Peristomium
52.	Which of the following plant yields the drug used in the treatment of hypertension ? (1) Rauwolfia (2) Plantago (3) Cinchona (4) Vinca
53.	When the two ecosystems overlap each other, the area is called as : (1) Habitat (2) Niche (3) Ecotype (4) Ecotone
54.	Who described double fertilization in angiosperms ? (1) Nawaschin (2) Strasburger (3) Nageli (4) Schwann
55.	Pollinia are found in which of the following family ? (1) Gramineae (2) Orchidaceae (3) Cyperaceae (4) Solanaceae
56.	Bicollateral bundles are found in which of the following family ? (1) Combretaceae (2) Cucurbitaceae (3) Commelinaceae (4) Brassicaceae
57.	Which of the following is a vessel less angiosperm ? (1) Digitalis (2) Degenaria (3) Desmodium (4) Dodonea

Question No.	Questions
58.	<p>Maximum stratification of plants is found in :</p> <p>(1) Temperate forests (2) Tropical rain forests (3) Subtropical forests (4) Alpine forests</p>
59.	<p>Which of the following characteristic feature is common to bryophytes, pteridophytes and gymnosperms ?</p> <p>(1) Haplodiplontic lifecycle (2) Presence of vascular tissue (3) Presence of Archegonia (4) Dominant sporophytic phase in the life cycle</p>
60.	<p>Which of the following terrestrial biome has the highest diversity of plant and animal life ?</p> <p>(1) Tropical savanna (2) Boreal forest (3) Tropical rain forest (4) Tundra</p>
61.	<p>During DNA replication, Okazaki fragments are used to elongate _____</p> <p>(1) The leading strand towards replication fork (2) The lagging strand towards replication fork (3) The leading strand away from replication fork (4) The lagging strand away from the replication fork</p>

Question No.	Questions
66.	<p>National Fisheries Development Board is located at</p> <p>(1) Hyderabad (2) Pune (3) Mumbai (4) New Delhi</p>
67.	<p>Kappa particles are present in :</p> <p>(1) Plastids (2) Mitochondria (3) Plasmids (4) Cytoplasm</p>
68.	<p>Pleiotropy occurs when a gene has :</p> <p>(1) Complementary genes elsewhere (2) A small effect on one trait (3) Reversible effect on the phenotype, depending on age (4) Many effects on the phenotype</p>
69.	<p>Chimeras are formed due to which of the following ?</p> <p>(1) Somatic mutations (2) Reverse mutations (3) Lethal mutations (4) Pleiotropic mutations</p>
70.	<p>In chloroplast, Chlorophyll is present in which of the following ?</p> <p>(1) Outer membrane (2) Inner membrane (3) Thylakoids (4) Stroma</p>
71.	<p>Oncogenes are the cancer causing genes in the cells but they do not express usually because of the presence of which of the following ?</p> <p>(1) Proto-oncogenes (2) Tumour promoters (3) Tumour suppressor genes (4) Transposons</p>

Question No.	Questions
72.	<p>Botulism caused by <i>Clostridium botulinum</i> affects which of the following ?</p> <p>(1) Lymph glands (2) Neuromuscular junction</p> <p>(3) Spleen (4) Intestine</p>
73.	<p>Muscle fatigue sets in due to the non-availability of which of the following ?</p> <p>(1) Calcium (2) ATP</p> <p>(3) Acting binding sites (4) Mg factor</p>
74.	<p>Larvae of Herdmania is known as :</p> <p>(1) Bipinnaria (2) Auricularia</p> <p>(3) Tadpole (4) Doliolaria</p>
75.	<p>The carp fishes Catla, Labeo and Cirrhina can be grown together in the same pond more economically as they show :</p> <p>(1) Parasitism (2) Commensalism</p> <p>(3) Symbiosis (4) No competition for food</p>
76.	<p>Which of the following triggers ovulation and development of corpus luteum ?</p> <p>(1) Follicle stimulating hormone</p> <p>(2) Luteinizing hormone</p> <p>(3) Testosterone</p> <p>(4) None of these</p>

Question No.	Questions
82.	<p>The type of development in which apical cell is utilized in the formation of an archegonium is known as :</p> <p>(1) Anacrogynous (2) Acrogynous</p> <p>(3) Heteroblastic (4) Jungermanniales</p>
83.	<p>In the members of which order archegonia are produced in roofed chambers ?</p> <p>(1) Sphaerocarpales (2) Marchantiales</p> <p>(3) Anthocertales (4) Jungermanniales</p>
84.	<p>Sporophyte is physically and physiologically dependent on gametophyte in which of the following division of plants ?</p> <p>(1) Thallophyta (2) Bryophyta</p> <p>(3) Pteridophyta (4) Spermatophyta</p>
85.	<p>The type of stele, in which a continuous ring of xylem surrounds the pith in the centre, is known as :</p> <p>(1) Plectostele (2) Actinostele</p> <p>(3) Siphonostele (4) Polystele</p>
86.	<p>Night blindness and Xerophthalmia are caused by the deficiency of which of the following ?</p> <p>(1) Vitamin B (2) Vitamin C</p> <p>(3) Vitamin A (4) Vitamin D</p>

Question No.	Questions
87.	<p>When the entire sporangium develops from a single cell initial then the development is known as :</p> <p>(1) Eusporangiate type (2) Leptosporangiate type (3) Acrogynous type (4) Anacrogynous type</p>
88.	<p>Largest male gamete in plants is found in which of the following ?</p> <p>(1) Ephedra (2) Cycas (3) Equisetum (4) Funaria</p>
89.	<p>Which of the following gymnosperms is the source of anticancerous drug ?</p> <p>(1) Pinus (2) Cycas (3) Ephedra (4) Taxus</p>
90.	<p>Chilgoza is obtained from which of the following ?</p> <p>(1) Pinus excelsa (2) Pinus gerardiana (3) Abies pindrow (4) Cedrus deodara</p>
91.	<p>The highest concentration of auxin in plants is found in the</p> <p>(1) Internodes (2) Growing tips of the plant (3) Dead cells of the plant (4) Roots of plants</p>
92.	<p>Which of the following enzyme is mainly responsible for reduction of molecular nitrogen ?</p> <p>(1) Nitrogenase (2) Nitric reductase (3) Nitrate reductase (4) Amylase</p>

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93.	<p>Restoring balance of contaminants in the environment using plants is called as :</p> <p>(1) Phytomorphology (2) Phytohormones (3) Photosynthesis (4) Phytoremediation</p>
94.	<p>Ernst Meyer is known for which of the following ?</p> <p>(1) Taxonomic classification (2) Biological species concept (3) Five kingdom classification (4) Evolutionary history</p>
95.	<p>The pyramid of energy in a pond ecosystem is always :</p> <p>(1) linear (2) upright (3) irregular (4) inverted</p>
96.	<p>A high BOD value in aquatic environment is indicative of which of the following ?</p> <p>(1) a pollution free system (2) a highly polluted system due to excess of nutrients (3) a highly polluted system due to abundant heterotrophs (4) a highly pure water with abundance of autotrophs</p>
97.	<p>Which part of the blood is affected in sickle cell disease ?</p> <p>(1) White blood cells (2) Hemoglobin (3) Red blood cell membrane (4) Platelets</p>

Question No.	Questions
98.	<p>Which of the following explain genetic disorders like alkaptonuria and albinism ?</p> <p>(1) Recessive inheritance (2) Dominant genes (3) X chromosomes (4) Y chromosomes</p>
99.	<p>Which of the following is called the sex-linked disease ?</p> <p>(1) Leukemia (2) Alzheimer's (3) Malignancy (4) Colour blindness</p>
100.	<p>Which of the following is not true for prokaryotic cells ?</p> <p>(1) Do not have membranous organelles (2) Is covered with a gelatinous sheath (3) Have a ribosome size of 70 S (4) Cell organelles are surrounded by membrane</p>

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(PG-EE-2022)

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LIFE SCIENCES

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2.	<p>The type of development in which apical cell is utilized in the formation of an archegonium is known as :</p> <p>(1) Anacrogynous (2) Acrogynous (3) Heteroblastic (4) Jungermanniales</p>
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14.	<p>T-lymphocytes originate from which of the following ?</p> <p>(1) liver (2) bone marrow (3) thymus (4) gall bladder</p>
15.	<p>The formation of two species from one ancestral species is known as :</p> <p>(1) allopatry (2) phyletic evolution (3) convergent evolution (4) divergent evolution</p>
16.	<p>To which of the following the codon, AUG belongs ?</p> <p>(1) Amber (2) Ochre (3) Initiation codon (4) Termination codon</p>
17.	<p>Transfer of pollen grains from the anther to the stigma of another flower of the same plant in known as :</p> <p>(1) Xenogamy (2) Geitonogamy (3) Cliestogamy (4) Chasmogamy</p>

Question No.	Questions
18.	Which of the following is NOT correctly matched ? (1) Sugarcane - Sciropophaga nivella (2) Wheat - Sesamia inferens (3) Rice - Diceladispera armigera (4) Cotton - Tetranychus tecarius
19.	Which of the following has anomalous secondary growth ? (1) Sunflower (2) Hordeum (3) Dracaena (4) Cucurbita
20.	The pesticides having very low biodegradation and strong affinity for fatty tissues are : (1) Organophosphates (2) Triazines (3) Organochlorines (4) Pyrethroids
21.	During DNA replication, Okazaki fragments are used to elongate _____ (1) The leading strand towards replication fork (2) The lagging strand towards replication fork (3) The leading strand away from replication fork (4) The lagging strand away from the replication fork
22.	Which of the following is not applicable to RNA ? (1) Complementary base pairing (2) 5 phosphoryl and 3 hydroxyl ends (3) Heterocyclic nitrogenous bases (4) Chargaff's rule

Question No.	Questions
23.	Removal of introns and joining of exons in a defined order during transcription is called as : (1) Splicing (2) Inducing (3) Slicing (4) Looping
24.	Which of the following statements is correct regarding ribosomes ? (1) Most of a cell's DNA molecule are stored there (2) Complete polypeptide is released from there (3) mRNAs are produced there (4) DNA replication takes place there
25.	Select the incorrectly matched pairs (1) Purines–Nitrogenous bases cytosine, thymine and uracil (2) Recombinant DNA–DNA formed by joining the DNA segments from two different sources (3) rRNA–RNA found in ribosomes (4) ATP–the energy-carrying compound in the cell
26.	National Fisheries Development Board is located at (1) Hyderabad (2) Pune (3) Mumbai (4) New Delhi
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32.	<p>Which of the following enzyme is mainly responsible for reduction of molecular nitrogen ?</p> <p>(1) Nitrogenase</p> <p>(2) Nitric reductase</p> <p>(3) Nitrate reductase</p> <p>(4) Amylase</p>

Question No.	Questions
33.	<p>Restoring balance of contaminants in the environment using plants is called as :</p> <p>(1) Phytomorphology (2) Phytohormones (3) Photosynthesis (4) Phytoremediation</p>
34.	<p>Ernst Meyer is known for which of the following ?</p> <p>(1) Taxonomic classification (2) Biological species concept (3) Five kingdom classification (4) Evolutionary history</p>
35.	<p>The pyramid of energy in a pond ecosystem is always :</p> <p>(1) linear (2) upright (3) irregular (4) inverted</p>
36.	<p>A high BOD value in aquatic environment is indicative of which of the following ?</p> <p>(1) a pollution free system (2) a highly polluted system due to excess of nutrients (3) a highly polluted system due to abundant heterotrophs (4) a highly pure water with abundance of autotrophs</p>
37.	<p>Which part of the blood is affected in sickle cell disease ?</p> <p>(1) White blood cells (2) Hemoglobin (3) Red blood cell membrane (4) Platelets</p>

Question No.	Questions
38.	<p>Which of the following explain genetic disorders like alkaptonuria and albinism ?</p> <p>(1) Recessive inheritance (2) Dominant genes (3) X chromosomes (4) Y chromosomes</p>
39.	<p>Which of the following is called the sex-linked disease ?</p> <p>(1) Leukemia (2) Alzheimer's (3) Malignancy (4) Colour blindness</p>
40.	<p>Which of the following is not true for prokaryotic cells ?</p> <p>(1) Do not have membranous organelles (2) Is covered with a gelatinous sheath (3) Have a ribosome size of 70 S (4) Cell organelles are surrounded by membrane</p>
41.	<p>Which of the following is the first body segment of earthworm ?</p> <p>(1) Protostomium (2) Peristome (3) Protostome (4) Peristomium</p>
42.	<p>Which of the following plant yields the drug used in the treatment of hypertension ?</p> <p>(1) Rauwolfia (2) Plantago (3) Cinchona (4) Vinca</p>
43.	<p>When the two ecosystems overlap each other, the area is called as :</p> <p>(1) Habitat (2) Niche (3) Ecotype (4) Ecotone</p>

Question No.	Questions
44.	Who described double fertilization in angiosperms ? (1) Nawaschin (2) Strasburger (3) Nageli (4) Schwann
45.	Pollinia are found in which of the following family ? (1) Gramineae (2) Orchidaceae (3) Cyperaceae (4) Solanaceae
46.	Bicollateral bundles are found in which of the following family ? (1) Combretaceae (2) Cucurbitaceae (3) Commelinaceae (4) Brassicaceae
47.	Which of the following is a vessel less angiosperm ? (1) Digitalis (2) Degenaria (3) Desmodium (4) Dodonea
48.	Maximum stratification of plants is found in : (1) Temperate forests (2) Tropical rain forests (3) Subtropical forests (4) Alpine forests
49.	Which of the following characteristic feature is common to bryophytes, pteridophytes and gymnosperms ? (1) Haplodiplontic lifecycle (2) Presence of vascular tissue (3) Presence of Archegonia (4) Dominant sprophytic phase in the life cycle

Question No.	Questions
50.	<p>Which of the following terrestrial biome has the highest diversity of plant and animal life ?</p> <p>(1) Tropical savanna (2) Boreal forest</p> <p>(3) Tropical rain forest (4) Tundra</p>
51.	<p>Who authored the book <i>Die Natürlichen Pflanzenfamilien</i> ?</p> <p>(1) Thorne (2) Takhtajan</p> <p>(3) Cronquist (4) Engler and Prantl</p>
52.	<p>Which of the following is a specimen duplicate of the holotype from the same collection of the same date and same locality ?</p> <p>(1) Isotype (2) Paratype</p> <p>(3) Lectotype (4) Neotype</p>
53.	<p>According to ICBN, which of the following is the starting date for a valid name of an angiosperm ?</p> <p>(1) 1st May 1753 (2) 21st June 1853</p> <p>(3) 31st July 1853 (4) 21st June 1753</p>
54.	<p>Cyathium inflorescence is found in members of which of the following family ?</p> <p>(1) Malvaceae</p> <p>(2) Labiatae</p> <p>(3) Cruciferae</p> <p>(4) Euphorbiaceae</p>

Question No.	Questions
55.	<p>Most of the spices are obtained from the members of which of the following family ?</p> <p>(1) Leguminosae (2) Apiaceae (3) Myrtaceae (4) Lauraceae</p>
56.	<p>The most advanced molluscs belong to which of the following class ?</p> <p>(1) Amphineura (2) Cephalopoda (3) Gastropoda (4) Monopacophora</p>
57.	<p>Which of the following does not belong to phylum Mollusca ?</p> <p>(1) Decapoda (2) Gastropoda (3) Cephalopoda (4) Monopacophora</p>
58.	<p>The <i>Periplaneta</i> belongs to which of the following phyla</p> <p>(1) Porifera (2) Annelida (3) Mollusca (4) Arthropoda</p>
59.	<p>Insects, which feed on one type of food are called as :</p> <p>(1) Polyphagous (2) Monophagous (3) Entomophagy (4) Autotrophs</p>
60.	<p>Which of the following are the excretory units of annelids ?</p> <p>(1) Uniferous tubules (2) Gills (3) Nephridia (4) Nephrostomes</p>

Question No.	Questions
61.	The one-gene-one enzyme hypothesis was proposed by : (1) Beadle and Tatum (2) Watson and Crick (3) Norman Borlaug (4) Singer and Nicolson
62.	A triplet code was first suggested by which of the following ? (1) Weber (1968) (2) Jacob and Monad (1961) (3) Allet (1975) (4) Gamow (1954)
63.	A piece of DNA molecule that can serve as a carrier for the genes to be cloned is called as a : (1) Virus (2) Vector (3) DNA junk (4) Gene factor
64.	The capacity of mature cells, when freed from plant body, to reorganize themselves into new individuals is known as : (1) Apomixis (2) Parthenogenesis (3) Totipotency (4) Somatic Hybridization
65.	The importance of tissue culture in studying plant morphogenesis was first anticipated by : (1) Haberlandt (2) Kotte (3) Robbins (4) White
66.	Which of the following enzymes is used in PCR reaction ? (1) Taq Polymerase (2) RNA Polymerase (3) Ribonuclease (4) Endonuclease

Question No.	Questions	Question No.
67.	<p>Which of the following is a plant useful in the study of plant genomes because of its small genome size ?</p> <p>(1) Avena sativa (2) Petunia porodii (3) Solanum nigrum (4) Arabidopsis thaliana</p>	78
68.	<p>Which of the following is the function of telomere ?</p> <p>(1) Movement of chromosomes (2) Stabilisation and protection of chromosomes (3) Separation of chromosomes (4) None of these</p>	74
69.	<p>If in a given sample, DNA thymine is 40% and cytosine is 10%, what will be the percentage of adenine ?</p> <p>(1) 40 (2) 80 (3) 10 (4) 90</p>	75
70.	<p>Where does the Calvin cycle take place ?</p> <p>(1) Stroma of the chloroplast (2) Thylakoid membrane (3) Cytoplasm surrounding the chloroplast (4) Chlorophyll molecule</p>	76
71.	<p>Which of the following is a hexaploid ?</p> <p>(1) Rice (2) Maize (3) Cotton (4) Oat</p>	77

Question No.	Questions	Question No.
72.	<p>The interchange of parts between non-homologous chromosomes is called as :</p> <p>(1) Duplication (2) Translocation</p> <p>(3) Inversion (4) Deletion</p>	
73.	<p>Extrachromosomal inheritance commonly occur in which of the following ?</p> <p>(1) Nucleus (2) Cytoplasmic organelles</p> <p>(3) Ribosomes (4) Cell membrane</p>	
74.	<p>In a family of four including a normal mother, a normal father, a color blind son and a normal son, who do you think has the defective X gene other than the affected son ?</p> <p>(1) The mother (2) The father</p> <p>(3) The normal son (4) The effected son only</p>	
75.	<p>Which of the following is wrong ?</p> <p>(1) Y chromosome lacks dosage compensation</p> <p>(2) X linked genes are inherited as criss cross</p> <p>(3) Y linked gene like haemophilia passes from father to son</p> <p>(4) X linked recessive genes are carried by females</p>	
76.	<p>A turner child born to normal parents is haemophilic. Where did the non-disjunction occur ?</p> <p>(1) Mother (2) Father</p> <p>(3) Zygote (4) Grand mother</p>	

Question No.	Questions
81.	Agar-agar powder used in tissue culture media is obtained from which of the following ? (1) Gonium (2) Gracilaria (3) Glomus (4) Gigaspora
82.	The site of nitrogen fixation in the cyanobacterium Nostoc is located in : (1) Thylakoids (2) Heterocyst (3) Vegetative Cell (4) Cytoplasm
83.	Which of the following algae shows parasitism ? (1) Oedogonium (2) Ulothrix (3) Cephaleuros (4) Sargassum
84.	Sexual reproduction is found in all the classes of algae except (1) Cyanophyceae (2) Chlorophyceae (3) Rhodophyceae (4) Phaeophyceae
85.	Which of the following is the genetic material in Cauliflower mosaic virus ? (1) RNA (2) DNA (3) Both RNA and DNA (4) None of these
86.	The rust <i>Puccinia graminis tritici</i> is : (1) Macrocytic, heteroecious (2) Macrocytic autoecious (3) Microcytic, heteroecious (4) Microcytic, autoecious

Question No.	Questions
87.	<p>Loose smut of wheat is caused by which of the following ?</p> <p>(1) Aspergilus (2) Puccinia (3) Urocystis (4) Ustilago</p>
88.	<p>Which of the following is one of the common fungal disease of man ?</p> <p>(1) Cholera (2) Typhoid (3) Plague (4) Ringworm</p>
89.	<p>Splitting of dinitrogen molecule into free nitrogen atom in biological N_2 fixation is carried out by which of the following ?</p> <p>(1) Hydrogenase (2) Dinitrogenase (3) Nitrogenase (4) Catalase</p>
90.	<p>In which group of plants, leaf performs dual function of photosynthesis and reproduction ?</p> <p>(1) Bryophyta (2) Pteridophyta (3) Gymnosperms (4) Angiosperms</p>
91.	<p>Oncogenes are the cancer causing genes in the cells but they do not express usually because of the presence of which of the following ?</p> <p>(1) Proto-oncogenes (2) Tumour promoters (3) Tumour suppressor genes (4) Transposons</p>
92.	<p>Botulism caused by <i>Clostridium botulinum</i> affects which of the following ?</p> <p>(1) Lymph glands (2) Neuromuscular junction (3) Spleen (4) Intestine</p>

Question No.	Questions
93.	<p>Muscle fatigue sets in due to the non-availability of which of the following ?</p> <p>(1) Calcium (2) ATP (3) Acting binding sites (4) Mg factor</p>
94.	<p>Larvae of Herdmania is known as :</p> <p>(1) Bipinnaria (2) Auricularia (3) Tadpole (4) Doliolaria</p>
95.	<p>The carp fishes Catla, Labeo and Cirrhina can be grown together in the same pond more economically as they show :</p> <p>(1) Parasitism (2) Commensalism (3) Symbiosis (4) No competition for food</p>
96.	<p>Which of the following triggers ovulation and development of corpus luteum ?</p> <p>(1) Follicle stimulating hormone (2) Luteinizing hormone (3) Testosterone (4) None of these</p>
97.	<p>Which of the following cells would be considered differentiated ?</p> <p>(1) Blastomere (2) Spemann organizer (3) Stem cell (4) Muscle cells</p>

Answer Key M.Sc. (Life Sciences) Sesion- 2022

Q.No.	A	B	C	D
1	2	4	1	2
2	2	4	4	2
3	3	1	2	3
4	1	2	3	2
5	2	1	1	3
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48	2	4	2	2
49	1	3	2	3
50	1	3	2	3

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96	3	1	2	2
97	2	4	2	4
98	4	4	1	3
99	3	3	4	4
100	3	2	4	1

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