Code No.	T – 2115

Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2024

CSS

GENETICS AND PLANT BREEDING

General Instructions

1. The Question Paper is having 100 Objective Questions, each carrying one mark.
2. The answers are to be (✓) 'tick marked' **only** in the "**Response Sheet**" provided.
3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

Time : 2 Hours **Max. Marks : 100**

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

Choose appropriate answer from the options in the questions.

(100 × 1 = 100 marks)

1. Which of the phyto hormone involved in plant tropic movements?
   A. Auxins
   B. Gibberillins
   C. Cytokinins
   D. Ethylene

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2. Thalamus is prominent in

   A. Thalamifiorae
   B. Disciflorae
   C. Caliciflorae
   D. Inferae

3. Adolf Engler and Karl Prantl proposed ———— system of classification.

   A. Phylogenetic
   B. Modern
   C. Artificial
   D. Natural

4. Dimorphic fungi means ————

   A. Unisexual
   B. Bisexual
   C. Exists in two forms
   D. Exists in single form

5. If two people who are both carriers for a genetically inherited fatal recessive disease decide to become parents, what will be the odds that their children will also be carriers?

A. 1 out of 4
B. 2 out of 4
C. 3 out of 4
D. 4 out of 4

6. Arrange the following Photoreceptors in the increasing order of higher wavelenth light perception (red to blue).

A. Phytochrome b- cryptochrome - phototropins - phytochrome a
B. Phytochrome b- phytochome a — cryptochrome- phototropins
C. Phytochrome b-cryptochrome-phytochome a- phototropins
D. cryptochrome-Phytochrome b-phytochome a- phototropins

7. Imagine that there is a recent medical research that discovered that there is a single human gene responsible for all of the various forms of physical deterioration commonly associated with diabetes. This is referred to as

A. a modifying gene
B. a regulator gene
C. pleiotropy
D. Co-dominance

8. Which among the following groups of algae have chrysolaminarin as their primary storage product?

A. Phaeophyceae, Euglenophyta, Xanthophyceae
B. Chrysophyceae, Prymnesiophyta, Bacillariophyceae
C. Phaeophyceae, Chrysophyceae, Chlorophyceae
D. Rhodophyceae, Prymnesiophyta, Bacillariophyceae

9. Amphiphloic siphonostele is the characteristic feature of

A. Rhizome of Marsilea
B. Stem of Equisetum
C. Rhizome of Pteris
D. Stem of lycopodium

10. Who proposed phylogenetic system of plant classification for the first time?

A. Engler and Prantl
B. Benthem and Hooker
C. Eichler
D. Carl Linnaeus

11. The number of toes for an animal species is determined by a single pair of alleles. The homozygous dominant individuals have 8 toes, heterozygous ones have 7, and homozygous recessive ones have 6, the inheritance pattern would be referred to as:

A. genome imprinting
B. intermediate expression
C. pleiotropy
D. epistasis

12. Which of the following is correct for k-selected species?

A. Large number of progenies with small size
B. Less number of progenies with small size
C. Less number of progenies with large size
D. Large number of progenies with large size

13. Which of the following is an exception to Mendel's idea that genes are passed on unchanged from generation to generation?

A. codominance
B. multiple-allele series
C. stuttering alleles
D. lethal alleles

14. Which of the following is/are found exclusively in the non-stacked stroma membranes?

A. Photosystem I
B. Photosystem II
C. Both photosystems I and II
D. None of the above

15. Inheritable chromosomal abnormalities are usually a result of

A. mechanical errors during mitosis
B. mechanical errors during meiosis
C. epigenetic changes
D. neither of the above

16. In a study of human blood groups, it was found that among a population of 400 individuals, 230 were Rh+ and 170 were Rh-. Assuming that this trait (i.e., being Rh+) is controlled by a dominant allele (D), calculate the allele frequencies of D.

A. 0.425
B. 0.348
C. 0.121
D. 0.454

17. Which of the following is a commonly used mounting medium in microscopy for permanent slide preparation?

A. D.P.X.
B. Canada balsam
C. Phosphate-buffered saline (PBS)
D. Ethanol

18. Endoreduplication does not play a significant role in which of the following plant developmental processes?

A. Fruit development
B. Trichome development
C. Seed development
D. Stomatal development

19. RNA is synthesized *in vivo* by:

A. replication
B. transcription
C. both A and B
D. neither A and B

20. Read the following sentences and answer the question

(1) jasmonic acid involved in plant development and growth, strigolactones involed in fruit ripening

(2) Abscisic acid is a stress hormone, majorly involved in stomatal closing during draught conditions

A. Statement (1) only is correct
B. Statement (2) only is correct
C. Both statements are correct
D. Both statements are wrong

21. *E. coli* RNA polymerase consists of the following subunits:

A. $\alpha, \alpha', \beta, \beta', \delta, \delta', \sigma$
B. $\alpha, \beta, \delta, \sigma$
C. $\alpha, \alpha', \beta, \beta', \delta, \sigma$
D. $\alpha, \alpha', \beta, \beta', \sigma$

22. The terminology ‘Rho dependent and Rho independent’ is associated with

A. translation termination
B. translation initiation
C. transcription termination
D. transcription initiation

23. Which of the following is a DNA binding protein?

A. RNA polymerase
B. DNA polymerase
C. Cro
D. A, B and C

24. Recombinases are used in

A. Cloning
B. Restriction digestion and ligation
C. both A and B
D. neither A and B

25. 'Magnetofection' is a

A. Method of gene transfer in plants
B. Method of isolating nano particles from plants
C. Method of isolating Fe nano particles from plants
D. None of the above

26. Transcription factors recognise which of these sites?

A. TATA
B. INR
C. DPE
D. A, B and C

27. Activator proteins can bend DNA due to:

A. DNA-protein interaction
B. protein-protein interaction
C. both A and B
D. neither A nor B

28. The enzyme 2'-O-methyl transferase is required for:

A. RNA capping
B. DNA methylation
C. histone methylation
D. none of the above

29. Which of the following alkaloid is using in the treatment of hypertension?

A. Atropine
B. Codeine
C. Reserpine
D. Nicotine

30. Small Nuclear Ribonuclear proteins are part of:

A. spliceosomes
B. ribosomes
C. nucleolus
D. RNA polymerase

31. The enzyme terminal uridylyl transferase is involved in

A. RNA editing
B. polly A tailing
C. t-RNA splicing
D. telomerase activity

32. Antibiotics like tetracycline and streptomycin are:

A. inhibitors of eukaryotic protein synthesis
B. inhibitors of eukaryotic RNA synthesis
C. inhibitors of prokaryotic protein synthesis
D. inhibitors of prokaryotic RNA synthesis

33. Drosha is required for which of the following RNA silencing?

A. siRNA
B. miRNA
C. virus-induced
D. A, B and C

34. Which of the following statements is true?

A. Telomerase is a reverse transcriptase
B. Telomerase carries a template RNA
C. Both A and B
D. Neither A nor B

35. Arrange the following phytohormones in the order of their action, embryogenesis-seed germination-maturation-death

A. Auxins-gibberillins-ethylene-absicic acid
B. ethylene -Auxins-gibberillins-absicic acid
C. absicic acid -ethylene -Auxins-gibberillins
D. ethylene -absicic acid- gibberillins-Auxins

36. Which of the following secondary metabolite is a product of shikimic add pathway?

A. Terpenes
B. Phenolics
C. Nitrogen- containing compounds
D. Pyrethroids

37. Enhancers are

A. Transcription factors
B. Factors that enhances DNA replication
C. Transcription factors that enhances transcription
D. DNA sequences

38. Which of the following is a polymerase?

A. *Tli*
B. *Pfu*
C. *Tfl*
D. A, B and C

39. ———— is a linear monomer of D-galactose and 3,6 anhydro-L-galactopyranose.

A. Silica
B. dextran
C. agarose
D. cellulose

40. Which of the following is the best evidence for template theory of enzyme reaction?

A. Compounds having structure similar to the substrate inhibit the reaction
B. Enzymes speed up the reaction to a definite extent
C. Enzymes determine the direction of a reaction
D. Enzymes in vivo increase the reaction rate

41. Which of the following organisms is responsible for the majority of oxygen production in aquatic environments?

A. *Escherichia coli*
B. *Cyanobacteria*
C. *Salmonella*
D. *Vibrio cholera*

42. Match list A with list B

A	B
1. Terpenes	A. Non-protein amino acids
2. Phenolics	B. Carotenoids
3. Nitrogen- containing compounds	C. Abcisic acid
4. Sesquiterpenes	D. Lignin

A. 1-C,2-A,3-D,4-B
B. 1-C, 2-D, 3-A, 4-B
C. 1-B, 2-D, 3-A, 4-C
D. 1-B, 2-A, 3-D, 4-C

43. What will be the water potential of a cell if its osmotic potential is -10 bars and its water pressure potential is 5 bars?

A. 5 bars
B. -5 bars
C. 15 bars
D. 50 bars

44. Which theory explains the organization of apical meristems in plants?

A. Protoderm theory
B. Histogen theory
C. Auxin theory
D. Tunica-corpus theory

45. Caulines are hormones

A. Specific to particular region of a plant
B. of meristamatic region
C. of abscission layers
D. none of these

46. Which statement is correct?

A. ring porous wood, carries more water for short period
B. diffuse porous wood carries more water
C. ring porous wood carries more water when need is higher
D. diffuse porous wood is less specialised but conducts water rapidly throughout

47. Dehydration reagents such as _____ and _____ are commonly employed after fixation to remove water from tissues before embedding them in paraffin wax for sectioning.

A. Ethanol and Ether
B. Ether and Chloroform
C. Chloroform and Isoamyl alcohol
D. xylene and Toluene

48. Promoter escape occurs after

A. Abortive initiation
B. 10 nucleotide-long RNA is formed
C. Elongation complex is formed
D. Initiation complex is formed

49. During grafting, when stock and scion are kept for uniting, which of the following will be the first to occur

A. formation of callus
B. production of plasmodesmata
C. differentiation of new vascular tissues
D. regeneration of cortex and epidermis

50. Which of the following is/are comes under the class of Isoquinolines.?

A. Atropine and Cocaine
B. Codeine and smorphine
C. Lupinine and nicotin
D. Resepine and lupinine

51. The 'Cos' sites are present in

A. Cosmids
B. Fosmids
C. λ phages
D. All of the above

52. Which of the following features is characteristic of Deuteromycotina, a group known as 'imperfect fungi'?

A. Sexual reproduction involving basidia and basidiospores
B. Formation of zygospores during reproduction
C. Lack of a known sexual reproductive phase
D. Formation of ascospores within asci

53. Incompatible plasmids

A. Cannot be maintained together in the same cell

B. Use same mechanism to regulate replication initiation

C. Will occur in a specific copy number in the cell, but there is no mechanism that ensures their equal number

D. All of the above

54. Which of the following statements about citrus canker is correct?

A. Citrus canker is caused by a bacterium known as *Xanthomonas citri*.

B. Citrus canker is caused by a virus.

C. Citrus canker primarily affects the roots of citrus trees.

D. Citrus canker is primarily transmitted through soil contamination.

55. What tissue is responsible for secondary growth in plant stems?

A. Cambium

B. Epidermis

C. Cortex

D. Pith

56. A restriction enzyme with a 6 bp recognition site will cut on average every

A. 4096 bp

B. 1296 bp

C. 36 bp

D. None of the above

57. Erythromycin and chloramphenicol act by inhibiting

A. Bacterial transcription and translation, respectively

B. Bacterial translation and transcription, respectively

C. Bacterial transcription

D. Bacterial translation

58. DNA scrunching occurs during

A. Transcription

B. DNA replication

C. Reverse transcription

D. Transcriptional gene silencing

59. *Atul*, a type II restriction endonuclease isolated from

A. *E. coli*
B. Spinacia oleracea
C. Apium graveolens
D. Agrobacterium tumefaciens

60. 'Chromosome combing' is a technique used in

A. FISH
B. GISH
C. Fiber FISH
D. Flow FISH

61. How much of 0.4 M HCl solution is required to bring the pH of 10 ml of a 0.4 M NaOH solution to 7.0?

A. 0.4 ml
B. 40 ml
C. 10 ml
D. 2 ml

62. Which enzymes are involved in primary carboxylation in C3 and C4 plants?

A. RuBP carboxylase and pyruvate carboxylase
B. PEP carboxylase and pyruvate carboxylase
C. PEP carboxylase and RuBP carboxylase
D. RuBP carboxylase and PEP carboxylase

63. What is the composition of the macromolecule chitin?

A. Nitrogen-containing polysaccharide
B. Phosphorous-containing polysaccharide
C. Sulphur-containing polysaccharide
D. Simple polysaccharide

64. Which of the following elements is not classified as a micronutrient in plants?

A. Nitrogen
B. Iron
C. Zinc
D. Magnesium

65. What principle underlies the chemiosmotic hypothesis of ATP synthesis in chloroplasts?

A. Proton gradient
B. Membrane potential
C. Accumulation of K+ ions
D. Accumulation of Na ions

66. Among these plant types, which one stores malic acid in vacuoles?

A. C4
B. CAM
C. C3
D. C2

67. What is the primary pigment involved in bacterial photosynthesis?

A. Chlorophyll a
B. Bacteriochlorophyll
C. Phycobilins
D. Carotenoids

68. Which property of enzymes involves their ability to accelerate the rate of chemical reactions without being consumed in the process?

A. Allosteric regulation
B. Coenzyme specificity
C. Catalytic efficiency
D. Induced fit mechanism

69. Which metal cofactor is essential for the activity of the nitrogenase enzyme complex involved in nitrogen fixation in plants?

A. Iron (Fe)
B. Zinc (Zn)
C. Molybdenum (Mo)
D. Copper (Cu)

70. Which enzyme catalyzes the conversion of phosphoenolpyruvate (PEP) to pyruvate in the glycolytic pathway?

A. Phosphofructokinase-1 (PFK-1)
B. Pyruvate kinase
C. Phosphoglycerate kinase
D. Enolase

71. In a monohybrid cross between two heterozygous pea plants (Pp $\times$ Pp), what is the probability of obtaining a homozygous dominant offspring?

A. 1/16
B. 1/4
C. 1/3
D. 3/4

72. In the context of apical meristems and theories on apical organization in plants, which of the following statements are true?

I. The histogen theory proposed by Hanstein suggests that the shoot apex is composed of three distinct layers or histogens, namely the protoderm, ground meristem, and procambium, which give rise to the epidermis, ground tissue, and vascular tissue, respectively.

II. The tunica-corpus theory proposed by Clowes suggests that the shoot apex is organized into two distinct layers: an outer layer called the tunica, responsible for the surface growth and derived from the outermost cell layer of the apical meristem, and an inner core called the corpus, responsible for the internal growth and derived from the inner layers of the meristem.

III. The shoot apical meristem theory proposes that the shoot apex is organized into a single central region called the shoot apical meristem (SAM), which contains a population of undifferentiated cells capable of continuous division and giving rise to all the aerial parts of the plant.

IV. The protoderm theory postulates that the shoot apex is primarily organized by the protoderm, a single-layered meristematic tissue at the apex, which gives rise to all the other tissues in a coordinated manner.

A. I and II
B. II and III
C. III and IV
D. I and IV

73. Which of the following structures are characteristic features of pollen grains?

A. Exine and intine
B. Stamen and stigma
C. Sepal and petal
D. Filament and anther

74. During the development of the female gametophyte (embryo sac. in flowering plants, how many mitotic divisions occur to form the mature embryo sac?

A. One mitotic division
B. Two mitotic divisions
C. Three mitotic divisions
D. Four mitotic divisions

75. Which type of microscope utilizes dark field illumination to enhance contrast in specimens?

A. Scanning Electron Microscope (SEM)
B. Transmission Electron Microscope (TEM)
C. Light Microscope
D. Atomic Force Microscope (AFM)

76. ———— are prokaryotic microorganisms lacking a cell wall, making them resistant to many antibiotics that target cell wall synthesis.

A. Yeast
B. Amoeba
C. Mycoplasma
D. Volvox

77. Consider the below measures of dispersion for dataset of yield from trees of two farms named A and B.

Farm A: Variance = 100, Standard Deviation = 10, Mean = 75

Farm B: Variance = 225, Standard Deviation = 15, Mean = 85

Which of the following statements is true regarding the variability of the yield between A and B?

A. The variability of yield is higher in A than in B.

B. The variability of yield is the same in both A and B.

C. The variability of yield is higher in B than in A.

D. The variability of yield cannot be determined based on the given information.

78. Carnoy's formula used during fixation of plant tissues during microscopy contains

A. Ethanol and chloroform

B. Butanol, chloroform, and Xylene

C. Ethanol and glacial acetic acid

D. Ethanol, chloroform, and glacial acetic acid

79. In a biochemical laboratory, various instruments are utilized for different purposes. Which of the below statements regarding colorimeter, spectrophotometer, and centrifuge is correct?

I. A colorimeter is a device used to measure the absorbance or transmittance of light by a colored solution at a specific wavelength, providing quantitative data on the concentration of the substance of interest.

II. Spectrophotometer, a more advanced instrument compared to a colorimeter, allows for the measurement of absorbance or transmittance across a range of wavelengths, enabling the construction of absorption spectra and analysis of complex mixtures.

III. Centrifuge is a high-speed device used for separating particles or components of a mixture based on their density or size through centrifugal force, facilitating tasks such as cell fractionation, purification of biomolecules, and isolation of subcellular organelles.

IV. Both colorimeter and spectrophotometer can be employed for qualitative analysis, while centrifuge is exclusively used for quantitative analysis of biological samples.

A. I and II

B. II and III

C. III and IV

D. I, II and III

80. What is the primary function of buffers in biological systems, and what is the main purpose of a pH meter in biological research?

A. Buffers regulate temperature fluctuations, and pH meters measure the temperature of solutions.

B. Buffers maintain a constant pH, and pH meters measure the pH of solutions.

C. Buffers act as reducing agents, and pH meters measure the concentration of reducing agents.

D. Buffers facilitate the separation of biomolecules, and pH meters measure the ionic strength of solutions.

81. Which of the following best describes cryobiology and its application in cryopreservation?

A. Cryobiology is the study of biological processes at extremely low temperatures, and cryopreservation is a technique used to preserve biological materials at such temperatures, typically below -80°C, to maintain their viability for long-term storage.

B. Cryobiology is the study of biological processes at high temperatures, and cryopreservation iS a technique used to preserve biological materials by subjecting them to high heat, typically above 100°C, to sterilize and store them.

C. Cryobiology is the study of biological processes in marine ecosystems, and cryopreservation is a technique used to preserve marine organisms in their natural habitat.

D. Cryobiology is the study of biological processes during extreme weather conditions, and cryopreservation is a technique used to preserve seeds and pollen grains under controlled humidity and temperature conditions.

82. Which technique involves the separation of compounds based on differential interaction with a mobile and stationary phase, while the other separates charged molecules in a gel matrix under an electric field?

A. Chromatography and electrophoresis

B. Gas chromatography and mass spectrometry

C. High-performance liquid chromatography and gel electrophoresis

D. Thin-layer chromatography and capillary electrophoresis

83. In which of the following scenarios would you use a chi-square test?

A. To compare the means of two independent samples

B. To determine the relationship between two categorical variables

C. To assess the difference between the means of three or more groups

D. To analyze the correlation between two continuous variables

84. Which of the following characteristics best describes Rhizopus, a genus of filamentous fungi?

A. Unicellular morphology

B. Septate hyphae with cross walls

C. Asexual reproduction by fragmentation

D. Complex multicellular fruiting bodies

85. Which statement accurately describes virus nomenclature?

A. Virus nomenclature follows a binomial system similar to that used for bacteria and other microorganisms, with each virus assigned a genus and species name based on its genetic makeup and host specificity.

B. Virus nomenclature is based on the symptoms and diseases they cause, with viruses named after the geographic locations where they were first discovered or the individuals who isolated them.

C. Virus nomenclature is standardized and regulated by the International Committee on Taxonomy of Viruses (ICTV), which establishes guidelines for naming viruses, including rules for assigning genera, species, and strain names.

D. Virus nomenclature is primarily determined by the commercial interests of pharmaceutical companies, with viruses often named after the brand names of vaccines or antiviral drugs developed to combat them.

86. ———— exudates in the rhizosphere contain organic acids that chelate metal ions, increasing their availability for plant uptake.

A. Stem

B. Root

C. Leaf

D. Stomata

87. Which of the following microorganisms is commonly found in marine environments and plays a crucial role in carbon cycling?

A. *Escherichia coli*
B. *Streptococcus pyogenes*
C. *Vibrio cholera*
D. *Pelagibacter ubique*

88. What best describes the life cycle of Marchantia, a genus of liverworts?

A. Haploid-dominant life cycle
B. Diploid-dominant life cycle
C. Sporophyte-dominant life cycle
D. Haplodiplontic life cycle

89. Which preservation method involves the use of beneficial microorganisms to metabolize sugars and produce acids, alcohol, and other compounds that preserve food and enhance flavor?

A. Freezing
B. Curing
C. Fermentation
D. Vacuum Packaging

90. In the life cycle of Chlorella, which reproductive process is primarily responsible for maintaining genetic diversity within the population?

A. Binary fission
B. Conjugation
C. Fragmentation
D. Sporulation

91. F.E. Fritsch proposed a classification system for algae based on which of the following criteria?

A. Cell wall composition
B. Pigment composition
C. Habitat preference
D. Reproductive structures

92. Which of the following characteristics is typically associated with the thallus structure of algae?

A. Vascular tissues

B. Roots, stems, and leaves

C. Variable levels of cellular organization ranging from unicellular to multicellular

D. Specialized reproductive structures enclosed within protective seed coats

93. Which group of algae, known for its diverse forms ranging from unicellular to multicellular, includes species characterized by their complex life cycles involving alternation of generations and possession of unique accessory pigments such as phycobilins?

A. Green Algae (Chlorophyta)
B. Red Algae (Rhodophyta)
C. Brown Algae (Phaeophyta)
D. Dinoflagellates (Dinophyta)

94. In the life cycle of Pinnularia, a genus of diatoms, which process occurs following cell division and is essential for the restoration of the original size and shape of the diatom frustule?

A. Auxosporulation
B. Heterothallism
C. Apomixis
D. Haplontic cycle

95. Among the following commercially significant algae-derived products, which one is primarily utilized in the food industry for its ability to stabilize and emulsify products, particularly in dairy and meat products, and is also employed in pharmaceuticals and cosmetics for its thickening and gelling properties?

A. Agar
B. Alginates
C. Carrageenan
D. Diatomaceous earth

96. In the reproductive strategy of Usnea, a genus of lichenized fungi, which specific mechanisms contribute to its adaptability and ecological success in harsh environments?

I. Formation of apothecia for sexual reproduction, ensuring genetic diversity

II. Production of specialized structures called isidia, aiding in dispersal and colonization

III. Incorporation of algae within its thallus, enhancing photosynthetic efficiency

IV. Utilization of both fungal hyphae and algal cells in the formation of soredia

A. I and II
B. II and III
C. II and IV
D. I, II and III

97. What are phytoalexins?

A. Plant hormones involved in growth and development
B. Toxic compounds produced by plants in response to pathogen attack
C. Enzymes responsible for photosynthesis in plants
D. Proteins involved in plant defense against herbivores

98. Which of the following factors contributes significantly to the management of paddy blast disease?

A. Soil pH levels
B. Crop rotation with non-host plants
C. Application of nitrogen-rich fertilizers
D. Mechanical cultivation techniques such as deep ploughing

99. Which aspect of Bordeaux mixture distinguishes its application in agriculture, particularly in managing fungal diseases?

A. Its unique formulation, comprising copper sulfate and hydrated lime
B. Its systemic action within treated plants
C. Its broad-spectrum efficacy against a range of fungal pathogens
D. Its strategic use as a preventative measure

100. What distinguishes the reproductive process of Cycas among gymnosperms?

A. Cycas employs heterospory
B. Cycas demonstrates homospory
C. Cycas follows an alternation of generations life cycle
D. Cycas utilizes vegetative propagation

ANSWER SHEET

1	A	B	C	D	E	26	A	B	C	D	E	51	A	B	C	D	E	76	A	B	C	D	E
2	A	B	C	D	E	27	A	B	C	D	E	52	A	B	C	D	E	77	A	B	C	D	E
3	A	B	C	D	E	28	A	B	C	D	E	53	A	B	C	D	E	78	A	B	C	D	E
4	A	B	C	D	E	29	A	B	C	D	E	54	A	B	C	D	E	79	A	B	C	D	E
5	A	B	C	D	E	30	A	B	C	D	E	55	A	B	C	D	E	80	A	B	C	D	E
6	A	B	C	D	E	31	A	B	C	D	E	56	A	B	C	D	E	81	A	B	C	D	E
7	A	B	C	D	E	32	A	B	C	D	E	57	A	B	C	D	E	82	A	B	C	D	E
8	A	B	C	D	E	33	A	B	C	D	E	58	A	B	C	D	E	83	A	B	C	D	E
9	A	B	C	D	E	34	A	B	C	D	E	59	A	B	C	D	E	84	A	B	C	D	E
10	A	B	C	D	E	35	A	B	C	D	E	60	A	B	C	D	E	85	A	B	C	D	E
11	A	B	C	D	E	36	A	B	C	D	E	61	A	B	C	D	E	86	A	B	C	D	E
12	A	B	C	D	E	37	A	B	C	D	E	62	A	B	C	D	E	87	A	B	C	D	E
13	A	B	C	D	E	38	A	B	C	D	E	63	A	B	C	D	E	88	A	B	C	D	E
14	A	B	C	D	E	39	A	B	C	D	E	64	A	B	C	D	E	89	A	B	C	D	E
15	A	B	C	D	E	40	A	B	C	D	E	65	A	B	C	D	E	90	A	B	C	D	E
16	A	B	C	D	E	41	A	B	C	D	E	66	A	B	C	D	E	91	A	B	C	D	E
17	A	B	C	D	E	42	A	B	C	D	E	67	A	B	C	D	E	92	A	B	C	D	E
18	A	B	C	D	E	43	A	B	C	D	E	68	A	B	C	D	E	93	A	B	C	D	E
19	A	B	C	D	E	44	A	B	C	D	E	69	A	B	C	D	E	94	A	B	C	D	E
20	A	B	C	D	E	45	A	B	C	D	E	70	A	B	C	D	E	95	A	B	C	D	E
21	A	B	C	D	E	46	A	B	C	D	E	71	A	B	C	D	E	96	A	B	C	D	E
22	A	B	C	D	E	47	A	B	C	D	E	72	A	B	C	D	E	97	A	B	C	D	E
23	A	B	C	D	E	48	A	B	C	D	E	73	A	B	C	D	E	98	A	B	C	D	E
24	A	B	C	D	E	49	A	B	C	D	E	74	A	B	C	D	E	99	A	B	C	D	E
25	A	B	C	D	E	50	A	B	C	D	E	75	A	B	C	D	E	100	A	B	C	D	E

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