BIOTECHNOLOGY

1. Seed dormancy is mainly controlled by

   (A) Giberellic acid
   (B) Abscissic acid
   (C) Cytokinin
   (D) Ethylene

2. A method for transferring protein to a nitrocellulose filter on which protein can be detected by a suitable probe is

   (A) Southern blotting
   (B) Northern blotting
   (C) Western blotting
   (D) None of the above

3. Charged molecules are separated based on varying rates of migration through a solid matrix when subjected to an electric field. This technique is known as

   (A) Photoreactivation
   (B) Gel electrophoresis
   (C) Autoradiography
   (D) Blotting

4. Direct DNA uptake by protoplasts can be stimulated by

   (A) Polyethylene glycol
   (B) Decanol
   (C) Luciferin
   (D) Cesium chloride

5. You have homogenized plant tissue and would like to separate chloroplasts from nuclei. Which of the following methods would be the most suitable?

   (A) Polyacrylamide gel electrophoresis
   (B) Differential centrifugation using sucrose gradient
   (C) Equilibrium density gradient centrifugation on CsCl gradients
   (D) Gel filtration

6. Which of the following amino acids, if added to acidic solution, will have buffer action on solution at the physiological pH?

(A) Alanine
(B) Glycine
(C) Histidine
(D) Arginine

7. Find the odd one from the following

(A) Leucoplasts
(B) Chromoplasts
(C) Chloroplasts
(D) Tonoplasts

8. Which one of the following structures carries out a similar function in both plant and animal cell?

(A) Contractile vacuole
(B) Cell wall
(C) Mitochondria
(D) Chloroplast

9. The phase of cell cycle during which the bulk of histones are synthesized is

(A) M-Phase
(B) G-Phase
(C) S-Phase
(D) None of the above

10. Preserving germplasm in frozen state is

(A) Cryopreservation
(B) Cold storage
(C) In situ preservation
(D) Vernalisation

11. Bt toxin produced by *Bacillus thuringiensis*, does NOT kill the bacteria itself because the toxin is

(A) isolated in a special intracellular sac
(B) in an inactive form inside the bacterial cell
(C) active only against eukaryotic ribosomes
(D) produced in very small quantities

12. Epigenetics may result from

(A) Mutations

(B) DNA Methylation
(C) Recombination
(D) Duplication

13. The variations observed among the regenerated plants under *in vitro* conditions may be due to

(A) Single gene mutation
(B) Point mutation
(C) Chromosomal aberration
(D) All of the above

14. The peptide hormone involved in controlling blood pressure is

(A) Testosterone
(B) Oxytocin
(C) Vassopressin
(D) Interferon B

15. The two polynucleotide chains of the parent DNA molecule separate due to the breaking of

(A) S-bond
(B) O-bond
(C) H-bond
(D) All of the above

16. Homologous organs are

(A) Similar in structure and dissimilar in function
(B) Dissimilar in structure and similar in function
(C) Similar in structure and function
(D) Dissimilar in function and structure

17. Which part of the human brain controls body temperature?

(A) Cerebrum
(B) Medulla
(C) Cerebellum
(D) Hypothalamus

18. Glycerol is added to protein samples before they are loaded to the 'wells' of PAGE. The function of glycerol is that it

(A) stabilizes protein structure
(B) provides density to the sample
(C) helps to bind SDS to the protein
(D) helps to reduce disulfide bond by ß-mercaptoethanol

19. Program used for essentially local similarity search is

(A) BLAST
(B) ExPASY
(C) Ras Mol
(D) SWISS-PROT

20. The Ames test is used to determine if a chemical

(A) increases the rate at which a bacterial cell divides
(B) decreases the number of cells in a culture
(C) is a potential mutagen
(D) decreases the ability of a cell to photosynthesize

21. Biofortification refers to breeding for

(A) higher concentration of micronutrient
(B) high plant strength
(C) drought tolerance
(D) cold tolerance

22. Ti plasmids are found in

(A) *Escherichia coli*
(B) *Saccharomyces cerevisiae*
(C) *Agrobacterium tumefaciens*
(D) *Arabidopsis thaliana*

23. Bt toxin producing plants are resistant to

(A) Fungal pathogens
(B) Bacterial pathogens
(C) Herbicides
(D) Insect pests

24. Which antibody type will be the most appropriate for passive vaccination?

(A) Polyclonal antibody
(B) Monoclonal antibody
(C) Humanized antibody
(D) Single chain antibody

25. In protein 'A', glutamic acid is replaced by glutamine to make protein 'B'. Which technique can separate these two proteins?

(A) Isoelectric focusing
(B) Pulse field electrophoresis
(C) SDS-PAGE
(D) Gel filtration

26. Adaptation of an organism is

(A) Acquired character
(B) Genetic character
(C) Both (A) and (B)
(D) None of the above

27. The development of a living organism from embryo stage to an adult stage is called

(A) Phylogeny
(B) Ontogeny
(C) Embryology
(D) Palaeobotany

28. The number of oxygen molecules released per photon of light in photosynthesis is called

(A) Respiratory quotient
(B) Quantum yield
(C) Quantum requirement
(D) Emerson effect

29. The synthesis of glucose from fat is called

(A) Glycolysis
(B) TCA
(C) Gluconeogenesis
(D) Saponification

30. During water stress in plants, increase in ABA level causes

(A) Stomatal opening
(B) Stomatal closure
(C) Increase in root length
(D) Inhibition of flowering

31. The process of development of fruits without fertilization is called

(A) Parthenogenesis
(B) Agamospermy
(C) Parthenocarpy
(D) Apomixis

32. Natural cannabinoids are obtained from the inflorescences of

(A) *Papaversomniferum*
(B) *Erythroxylum coca*
(C) *Cannabis sativa*
(D) *Datura innoxia*

33. The plants which are genetically identical to the original plant from which they were grown are called as

(A) Somaclones
(B) Somatic hybrids
(C) Explants
(D) Recombinants

34. What is the function of Bowman's capsule and glomerulus?

(A) Reabsorption of water from blood
(B) Reabsorption of hormones from blood
(C) Reabsorption of ions from blood
(D) Filtration of blood

35. Nissl's bodies are predominantly composed of

(A) Nucleic acid and SER
(B) Protein and lipids
(C) DNA and RNA
(D) Free ribosomes and RER

36. Which of the following is uricotelic?

(A) Birds
(B) Insects
(C) Lizards
(D) All of the above

37. Which enzyme is responsible for lysis of fibrin during fibrinolysis?

(A) Plasmin
(B) Fibrin
(C) Thrombin
(D) Thrombokinase

38. Myelin sheath is produced by

(A) Oligodendrocytes and osteoclasts
(B) Schwann cells and oligodendrocytes
(C) Osteoclasts and astrocytes
(D) Astrocytes and Schwann cells

39. Part of the kidney through which the ureter, blood vessels, and nerves enter is called

(A) Renal medulla
(B) Hilum
(C) Urethra
(D) Renal cortex

40. During a blood transfusion, if the blood group of the recipient and donor does not correctly match, it will result in clumping of RBCs due to

(A) Antigen-antibody reaction
(B) Antigen-antigen reaction
(C) Antibody - antibody reaction
(D) None of the above

41. What is the function of scrotum?

(A) To maintain high temperature
(B) To maintain low temperature
(C) Hetero-thermal regulation
(D) None of the above

42. Which of the following is the method in which sperm is directly injected into the ovum?

(A) GIFT
(B) ET
(C) ICSI
(D) IUCD

43. Oblique fissures are associated with

(A) Left Lung
(B) Both lungs
(C) Heart
(D) None of the above

44. Which class of ions stimulates the ATPase activity of myosin head?

(A) Magnesium
(B) Manganese
(C) Ferric
(D) Calcium

45. Hypocalcemia leads to

(A) Tetany
(B) Stronger muscle contractions
(C) Cholelithiasis
(D) Kidney stones

46. Oxytocin helps in

(A) Ovulation
(B) Lactation
(C) Childbirth
(D) Both (B) and (C)

47. The function of helper T-cells is to

(A) Stimulate B-cells
(B) Kill antigens
(C) Kill antibodies
(D) Suppress B-cells

48. Serum differs from blood in

(A) Lacking albumins
(B) Lacking globulins
(C) Lacking clotting factors
(D) Lacking antibodies

49. Multipolar neurons are found in the

(A) Retina of eye
(B) Cerebral cortex
(C) Embryonic stage
(D) None of the above

50. Offspring formed by sexual reproduction exhibit more variation than those formed by asexual reproduction because

(A) Sexual reproduction is a lengthy process
(B) Gametes of parents have qualitatively different genetic composition
(C) Genetic material comes from parents of two different species
(D) Greater amount of DNA is involved in sexual reproduction

51. The bacterium used in the production of insulin by genetic engineering is

(A) *Mycobacterium*
(B) *Escherichia*
(C) *Rhizobium*
(D) *Saccharomyces*

52. The Golden Rice variety is rich in

(A) Ascorbic acid
(B) Beta carotene
(C) Riboflavin
(D) Thiamine

53. …….. culture is the best-suited method for the production of virus-free plants

(A) Ovule
(B) Anther
(C) Embryo
(D) Meristem

54. The Ti plasmid has the ability to cause crown gall tumour in

(A) Rice
(B) Tomatoes
(C) Peanuts
(D) Fruit trees

55. Lambda EMBL3 is a

(A) Gene
(B) Protein
(C) Restriction enzyme
(D) Phage Vector

56. Microfilaments are composed of

(A) Actin
(B) Myosin
(C) Tubulin
(D) Chitin

57. Lysosomes are produced by

(A) Mitochondria
(B) Endoplasmic reticulum
(C) Golgi complex
(D) Nucleus

58. The process of synthesis of glucose is called

(A) Glycogenesis
(B) Glycolysis
(C) Gluconeogenesis
(D) All of the above

59. …… part of a neuron receives information from other neurons

(A) Axon
(B) Dendrites
(C) Cell body
(D) Myelin sheath

60. Phagocytic cells are

(A) Neutrophils, Mast cells
(B) Mast cells, Macrophages
(C) Mast cells, Lymphocytes
(D) Neutrophils, Macrophages

61. Which of the following is an intracellular second messenger?

(A) AMP
(B) GMP
(C) Acetylcholine
(D) Inositol triphosphate

62. Which of the following immune cells are most effective at destroying intracellular pathogens?

(A) T_H cells
(B) B cells
(C) Ts cells
(D) Tc cells

63. The specificity of an antibody is due to

(A) the Fc portion of the molecule
(B) the heavy chains
(C) its valence
(D) the variable portion of the heavy and light chain

64. …… vaccine does not provide lifetime protection

(A) Polio
(B) Tetanus
(C) Smallpox
(D) Typhoid

65. The enzymes that remove supercoiling in replicating DNA ahead of the replication fork are

(A) Topoisomerases
(B) Helicases
(C) Primases
(D) DNA polymerases

66. An example of RNA-dependent DNA polymerase is

(A) RNA polymerase I
(B) RNA polymerase II
(C) Reverse transcriptase
(D) DNA ligase

67. Which position of a codon is said to be wobble?

(A) First
(B) Second
(C) Third
(D) Fourth

68. Ribosomes are formed of

(A) DNA and RNA
(B) RNA and Protein
(C) DNA and Protein
(D) RNA and Amino acids

69. The function of snRNA in the cell is

(A) to modify RNA molecules
(B) to be a component of the ribosome
(C) to encode genetic information
(D) to carry amino acids to the ribosome

70. The chemiluminescence is commonly used to visualize bands of interest in

(A) Southern blotting
(B) Northern blotting
(C) Eastern blotting
(D) Western blotting

71. ……. has beads on a string structure

(A) Nucleosomes
(B) Chromosomes
(C) Chromatin
(D) Heterochromatin

72. ……. can fix atmospheric nitrogen and play a role in nitrogen cycling

(A) Cyanobacteria
(B) Brown algae
(C) Green algae
(D) Red algae

73. ……. materials are used as a bio-plastics

(A) Polystyrene
(B) Polypropylene
(C) Polyhydroxybutyrate
(D) All of the above

74. In ecosystems, …….type of fungi are responsible for the decomposition of dead organic matter

(A) Mutualist
(B) Commensal
(C) Saprophyte
(D) Parasite

75. Name the type of culture that is prepared by inoculating directly from the tissue of an organism to culture media

(A) Primary cell culture
(B) Secondary cell culture
(C) Cell lines
(D) Transformed cell culture

76. Which of the following microorganisms is eliminated in canned foods?

(A) *Lactobacillus*
(B) *Clostridium botulinum*
(C) *Mycobacterium tuberculosis*
(D) *Coxiella burnetiid*

77. Which type of mutagen is Acridine orange?

(A) Chemical compound
(B) Transposon
(C) Base analogue
(D) Intercalating agent

78. The part of mRNA that determines the specificity of the amino acid attached is

(A) Acceptor arm
(B) D loop
(C) ΨU loop
(D) Variable loop

79. Which of the following does not take part in gene expression?

(A) Replication
(B) Transcription
(C) Translation
(D) RNA processing

80. What cytokines are produced in response to viral infection?

(A) Interferons
(B) Interleukins
(C) Lymphokines
(D) All of the above

81. The region where the bacterial genome resides is termed as

(A) Cytoplasm
(B) Nucleus
(C) Nucleoid
(D) Ribosome free region

82. Yellow spots on Citrus leaves are due to the deficiency of

(A) Magnesium
(B) Iron
(C) Zinc
(D) Boron

83. Ginger is a stem and not a root because it

(A) Lacks chlorophyll
(B) Stores food material
(C) Has nodes and internodes
(D) Grows horizontally in the soil

84. Which plant product is used in leather industry?

(A) Resin
(B) Latex
(C) Mucilage
(D) Tannin

85. Biodiesel is mostly produced from the members of

(A) Euphorbiaceae
(B) Liliaceae
(C) Myrtaceae
(D) Malvaceae

86. The chemical properties of an atom are related to the number of

(A) Protons
(B) Electrons
(C) Neutrons
(D) All of the above

87. The desired varieties of economically useful crops are raised by

(A) Natural selection
(B) Mutation
(C) Hybridisation
(D) Vernalization

88. A pollutant released from paddy fields is

(A) H_2O_2
(B) CH_4
(C) CO
(D) CO_2

89. The region where soil and roots make contact, particularly in grasslands, is called

(A) Rhizophere
(B) Rhizome
(C) Rhizoids
(D) Rhizopus

90. Nitrogen fixation is the conversion of

(A) N_2 to N
(B) N_2 to NH_3
(C) N_2 to NO_3^-
(D) N_2 to Urea

91. The main basis of the classification of Protozoa is

(A) Number of nuclei
(B) Shape of the organisms
(C) Locomotory device
(D) Method of reproduction

92. Which among the following is a protein deficiency disease?

(A) Scurvy
(B) Eczeme
(C) Kwashiorkor
(D) Mycoses

93. Animals that are well-known to use pheromones are

(A) Hydra
(B) Centipedes
(C) Ants
(D) Pigeons

94. The tissue that acts as the first line of protection for body from any physical or chemical damage is

(A) Adipose
(B) Muscular
(C) Epithelial
(D) Areolar

95. Which toxic element is present in newspapers?

(A) Mg
(B) Pb
(C) Hg
(D) Cd

96. The most important vectors of human diseases would probably be

(A) Moths
(B) Beetles
(C) Ants
(D) Fleas

97. pH of lemon juice is

(A) 1.5
(B) 2.5
(C) 3.5
(D) 4.5

98. Bleaching powder is a compound of

(A) Calcium
(B) Magnesium
(C) Sulphur
(D) Sodium

99. An active component of clove oil is

(A) Menthol
(B) Methanol
(C) Eugenol
(D) Benzaldehyde

100. The source of energy that causes the least global warming is

(A) Geothermal energy
(B) Natural gas
(C) Petroleum
(D) Coal

101. The protein folding is assisted by

(A) Zymogen
(B) Molecular Chaperon
(C) Chitoson
(D) Enzymes

102. The secondary structure of proteins is predicted using

(A) Hane's Plot
(B) Ramachandran plot
(C) Moody's Plot
(D) Fick's plot

103. The charge to mass ratio of cathode rays resembles that of

(A) α particles
(B) anode rays
(C) β rays
(D) protons

104. N-acetyl glucosamine and N-acetyl muramic acid are the cell wall components of

(A) Bacteria
(B) Yeast
(C) Fungi
(D) Algae

105. The number of unpaired electrons in an O_2 molecule is

(A) 1
(B) 2
(C) 3
(D) 4

106. The highest concentration of cystine can be found in

(A) Melanin
(B) Keratin
(C) Collagen
(D) Myosin

107. Which of the following properties of a colloidal solution is analysed using Zeta potential?

(A) Solubility
(B) Stability of the colloidal particles
(C) Size of the colloidal particles
(D) Viscosity

108. Which one of the following reagents is also known as Sanger's reagent?

(A) 1-fluoro-2,4-dinitrobenzene (FDNB)
(B) Phenylisothiocyanate
(C) Cyanogen
(D) β-mercaptoethanol

109. Momentum transfer is governed by

(A) Newton's law of viscosity
(B) Fick's Law
(C) Ohm's law
(D) Fourier's law

110. The ratio of inertia force to viscous force is known as

(A) Grashof number
(B) Reynolds number
(C) Fourier number
(D) Nusselt number

111. Which of the following is a time dependent non-Newtonian fluid?

(A) Dilatant
(B) Pseudoplastic
(C) Bingham
(D) Thixtropic

112. Which of the following is a feature of DNA-binding sites for regulatory proteins?

(A) Cytosine rich sequence
(B) Guanine rich sequence
(C) C_pG repeats
(D) Palindromic sequence

113. Constituents of producer gas are

(A) CO, H_2
(B) H_2, CH_4, CO
(C) CO, N_2, H_2
(D) LPG

114. The poisonous gas formed due to the incomplete combustion of a fuel is

(A) Carbon dioxide
(B) Carbon monoxide
(C) Isocyanate
(D) Nitrogen

115. Buffer system of blood is

(A) Haemoglobin
(B) Oxygen
(C) Sodium carbonate
(D) Carbonic acid

116. Alginate is extracted from

(A) Red seaweed
(B) Brown seaweed
(C) Green seaweed
(D) White seaweed

117. Gel electrophoresis separates nucleic acid molecules based on

(A) charge on molecules
(B) size of the molecules
(C) nature of the molecules i.e. whether DNA or RNA
(D) chemical properties of the nucleic acids

118. Heat transfer in liquid and gases takes place by

(A) Conduction
(B) Convection
(C) Radiation
(D) Conduction and Convection

119. In thermodynamics, an isolated system will have

(A) Exchange of mass and heat
(B) Exchange of heat
(C) No exchange of heat and mass
(D) Only mass transfer

120. In batch fermentation process, primary metabolites are produced in

(A) Log phase
(B) Lag Phase
(C) Stationary phase
(D) Decline phase

121. Monoclonal antibodies recognize a single

(A) Antigen
(B) Bacterium
(C) Epitope
(D) B cells

122. Which of the following is called 'Pearl ash'?

(A) Na_2CO_3
(B) $NaHCO_3$
(C) $CaCO_3$
(D) K_2CO_3

123. The excess of Nitrogen and Phosphorous in water causes

(A) Eutrophication
(B) Precipitation
(C) Emulsification
(D) Coagulation

124. How many water molecules are present in one molecule of washing soda?

(A) 4
(B) 6
(C) 8
(D) 10

125. Mitosis occurs in

(A) Sex cells
(B) Ovum cells
(C) Somatic cells
(D) Sperm cells

126. The destruction of microorganisms by steam sterilization is described as a

(A) Zero-order reaction
(B) First-order reaction
(C) Third-order reaction
(D) Second-order reaction

127. Darcy- Weisbach equation gives the relation between

(A) Pressure and temperature
(B) Mass, volume and pressure
(C) Head loss and pressure loss
(D) Pressure loss only

128. The surfactants which contain both cationic and anionic centers attached to the same molecule are called

(A) Anionic
(B) Cationic
(C) Amphoteric
(D) Non-ionic

129. Which is the acid consumption stage in biogas production?

(A) Hydrolysis
(B) Acidogenesis
(C) Acetogenesis
(D) Methanogenesis

130. Pyrolysis is a thermochemical combustion process in the absence of

(A) Oxygen
(B) Nitrogen
(C) Hydrogen
(D) Carbon

131. Identify the correct start codon required for initiating translation on mRNA

(A) UAG
(B) UAA
(C) UGA
(D) AUG

132. Gamma Amino Butyric Acid is a ……..

(A) Neuroinhibitor
(B) Neurotransmitter
(C) Protein Inhibitor
(D) Muscle protein

133. Which of the following polypeptide chains gets affected in sickle cell anaemia?

(A) Alpha Chain
(B) Beta Chain
(C) Gamma Chain
(D) Delta Chain

134. Racemic mixture is an equimolar concentration of

(A) Enantiomers
(B) Diastereomers
(C) Enantiomer and meso compound
(D) Meso compound

135. Dimethyl ether and ethyl alcohol are

(A) Position isomers
(B) Chain isomers
(C) Functional isomers
(D) Metamers

136. The carbon atom having four different substituents is called as

(A) Chiral carbon
(B) Achiral carbon
(C) Symmetric carbon
(D) Asymmetric carbon

137. Which among the following is commonly added to the 5' end of eukaryotic primary transcripts during RNA processing?

(A) 3' poly (A) tail
(B) Introns
(C) Ribonucleotides
(D) 5' cap

138. Which of the following methods is used for glucose estimation?

(A) DNS Method
(B) Lowry method
(C) Bligh and dyer method
(D) LNS Method

139. The DNA separated by agarose gel electrophoresis is visualized using

(A) Bromophenol blue
(B) Acetocarmine
(C) Aniline blue
(D) Ethidium bromide

140. Amino acids detected by spraying the plate with ninhydrin solution is an example of

(A) Column chromatography
(B) Thin layer chromatography
(C) Paper chromatography
(D) Liquid chromatography

141. Which of the following analytical techniques gives the information about the functional groups?

(A) SEM
(B) TEM
(C) AFM
(D) FTIR

142. Cell-wall biosynthesis is inhibited by antibiotics by inhibiting the biosynthesis of

(A) Lipopolysaccharide
(B) Cellulose
(C) Peptidoglycan
(D) Proteins

143. Which of the following antibiotics inhibits RNA synthesis?

(A) Penicillin
(B) Ampicillin
(C) Tetracycline
(D) Rifampicin

144. The metal in the core structure of Vitamin B_{12} is

(A) Zinc
(B) Cobalt
(C) Iron
(D) Copper

145. Which of the following vitamins enhances calcium uptake in bone?

(A) Vitamin A
(B) Vitamin D
(C) Vitamin E
(D) Vitamin K

146. Which of the following pumps is responsible for initiating muscle contraction through depolarization of muscle cell membrane?

(A) Na^+ Pump
(B) K^+ Pump
(C) Ca^{2+} Pump
(D) Mg^{2+} Pump

147. Which of the following is the first immunoglobulin produced in the neonates?

(A) IgA
(B) IgG
(C) IgM
(D) IgE

148. A patient came to the clinic complaining of chest pain that started a week ago. Which one of the following markers would you measure?

(A) BNP
(B) Troponins
(C) Creatine Kinase
(D) Myoglobin

149. 98 grams of sulphuric acid are dissolved in water to prepare one litre of solution. The normality of the solution is

(A) 1
(B) 2
(C) 3
(D) 4

150. Which of the following plant tissue culture methods is used for the production of secondary metabolites?

(A) Meristem culture
(B) Protoplast fusion
(C) Axillary buds
(D) Cell suspension culture

Subject Name: 601 BIOTECHNOLOGY									
SI No.	**Key**	**SI No.**	**Key**	**SI No.**	**Key**	**SI No.**	**Key**	**SI No.**	**Key**
1	B	31	C	61	D	91	C	121	C
2	C	32	C	62	D	92	C	122	D
3	B	33	A	63	D	93	C	123	A
4	A	34	D	64	B	94	C	124	D
5	B	35	D	65	A	95	D	125	C
6	C	36	D	66	C	96	D	126	B
7	D	37	A	67	C	97	B	127	C
8	C	38	B	68	B	98	A	128	C
9	C	39	B	69	A	99	C	129	D
10	A	40	A	70	D	100	A	130	A
11	B	41	B	71	A	101	B	131	D
12	B	42	C	72	A	102	B	132	A
13	D	43	B	73	C	103	C	133	B
14	C	44	D	74	C	104	A	134	A
15	C	45	A	75	A	105	B	135	C
16	C	46	D	76	B	106	B	136	A
17	D	47	A	77	D	107	B	137	D
18	B	48	C	78	A	108	A	138	A
19	A	49	B	79	A	109	A	139	D
20	C	50	B	80	A	110	B	140	C
21	A	51	B	81	C	111	D	141	D
22	C	52	B	82	A	112	D	142	C
23	D	53	D	83	C	113	C	143	D
24	A	54	D	84	D	114	B	144	B
25	A	55	D	85	A	115	D	145	D
26	C	56	A	86	B	116	B	146	C
27	B	57	C	87	C	117	B	147	C
28	B	58	C	88	B	118	B	148	B
29	C	59	B	89	A	119	C	149	B
30	B	60	D	90	B	120	A	150	D