GPAT QUESTION PAPER 2005 WITH ANSWER KEY

PHARMACEUTICAL SCIENCE

Time : 3 hours **Maximum Marks : 150**

(Q. 1 - 30) CARRY ONE MARK EACH

1. If the Carr's index of a powder is 10 % then the type of powder flow is
   (a) Poor (b) Excellent (c) Very poor (d) Good
2. Mixing of semisolids is carried out using
   (a) Double cone mixer (b) Rotating cube mixer
   (c) Planetary mixer (d) Fluidized bed mixer
3. In the preparation of small pox vaccine, the drying process used is
   (a) Spray drying (b) Vacuum drying (c) Drum drying (d) Freeze drying
4. In cosmetic preparations, an oxidant used in an aqueous system, is
   (a) Sodium formaldehyde sulphoxylate (b) α-Tocopherol
   (c) Methyl paraben (d) Phenol
5. In tablet coating process, inadequate spreading of the coating solution before drying causes
   (a) Orange peel effect (b) Sticking effect (c) Blistering effect (d) Picking effect
6. Presence of one of the following characteristics show that the Rauwolfia serpentine is adulterated with other species of Rauwolfia.
   (a) Compound starch grains (b) Cluster crystals of calcium oxalate
   (c) Lignified sclerides (d) Unlignified pericyclic fibres
7. Chinese rhapontic rhubarb can be distinguished from Indian rhubarb by fluorescence developed in UV light which is
   (a) Deep yellow (b) Deep violet (c) Green (d) Blue
8. Citrus flavonoids are rich in
   (a) Aesculetin (b) Fraxin (c) Hesperidin (d) Scopoletin
9. The quantitative values determined for the identification of leaf drugs remainconstant throughout the age of plant EXCEPT
   (a) Stomatal number (b) Veinlet termination number
   (c) Veinislet number (d) Stomatal Index
10. The alkaloid which inhibits the cholinesterase undergoes hydrolysis in solution togive methyl carbamic acid and eseroline is
    (a) Scopolamine (b) Pyridostigmine (c) Neostigmine (d) Physiostigmine
11. Luminescence is the term applied to
    (a) Absorbed radiation (b) Re-emission of previously absorbed radiation
    (c) Excited radiation (d) Transmitted radiation

12. Polarogram of a solution containing an electro-reducible substance is obtained byplotting
    (a) Current vs. Volume
    (b) Current vs. Potential
    (c) Resistance vs. Time
    (d) Potential vs. Volume
13. Silica gel used in most of the absorbent columns contains –OH groups. So it is
    (a) Basic
    (b) Neutral
    (c) Acidic
    (d) Both acidic and basic
14. The electronic transition possible in Br_2 is
    (a) $\sigma - \sigma^*$
    (b) $\sigma - \sigma^*$ and $n - \sigma^*$
    (c) $\sigma - \pi^*$ and $\pi - \pi^*$
    (d) $n - \pi^*$ and $\sigma - \pi^*$
15. Ferrous ion is very weakly colored for colorimetric analysis. It can be converted into a highly colored complex using
    (a) H_2SO_4
    (b) PDAB
    (c) Thymol blue
    (d) 1:10-Phenanthroline
16. Prazepam, Oxazepam, Clonazepam are structurally similar and have the system
    (a) 5H-Dibenz (b, f) azepine
    (b) 1,2,4-Benzothiadiazepine
    (c) Benzodiazepine
    (d) Phenothiazine
17. 11 β, 21-Dihydroxy pregn-4-ene-3,18,20-trione is
    (a) Aldosterone
    (b) Progesterone
    (c) Cholesterol
    (d) Cortisone
18. 4, 7-Dichloroquinoline on treatment with 4-amino phenol gives
    (a) 7-chloro-2-(2-hydroxy phenyl amino) quinoline
    (b) 7-chloro-4-(4-amino phenyl) Quinoline
    (c) 7-chloro-4-(4-hydroxy phenyl amino) quinoline
    (d) 4-chloro-7-(4-Hydroxy phenyl amino) quinoline
19. Ecgonine, a hydrolytic product of cocaine on treatment with chromium trioxide gives a keto acid, which on thermal decarboxylation results in
    (a) Atropic acid (b) Tropic acid (c) Pseudo cocaine (d) Tropinone
20. A natural product derivative developed as an antimalarial is
    (a) Artemether (b) Paludrine (c) Pyrimethamine (d) Halofantrine
21. 'Ternary complex' refers to the state when
    (a) An enzyme forms a covalent complex with its substrate
    (b) An enzyme forms a non covalent complex with either a substance or a product
    (c) An enzyme that catalyses a reaction with two or more substrates, is concurrently complexed with both substrates
    (d) An enzyme complexed to a product, just after catalysis
22. The most important clue that helped in the determination of the double helicalstructure of DNA came from
    (a) Chargaff's rules
    (b) Hershey-Chase experiment
    (c) Avery-MacLeod-McCarty experiment
    (d) Nirenberg and Khorana's codon assignments

23. Diversity in antibody molecules is brought about by

(a) Post-translational modifications (b) Gene rearrangements

(c) Usage of special genetic codes (d) Multiple mutations in the polypeptides

24. The etiological agent of infectious mononucleosis, also associated with a form of Burkitt's lymphoma is

(a) Varicella Zoster Virus (b) Epstein Barr Virus

(c) Picorna Virus (d) Papovavirus

25. Tissue plasminogen activator that disperses blood clots, beneficial if it is given within

(a) 3 days (b) 9 hours (c) 3 hours (d) 24 hours

26. An anticholinestrase which is useful in Alzheimer's disease is

(a) Arecoline (b) Donepezil (c) Isoproterenol (d) Clioquinol

27. A drug is used as an ophthalmic solution in Herpes keratits is

(a) Zalcitabine (b) Trifluridine (c) Ritonavir (d) Stavudine

28. A macrolide antibiotic used as a powerful immunosuppressive agent is

(a) Erythromycin (b) Azithromycin (c) Tacrolimus (d) Clarithromycin

29. Cytosine arabinoside acts on this phase of the cell cycle

(a) G_1 (b) G_2 (c) M (d) S

30. The chairman of the Drugs Technical Advisory Board is

(a) The drugs Controller of India

(b) The Director, Central Drugs Laboratory, Kolkata

(c) The President, Pharmacy Council of India

(d) The Director General of Health Services

31. Predict the product obtained by treating 6 – chloro-3,5-daimino pyrazin-2-methyl carboxylate with Guanidian

(a) Amilofide (b) Hydrochlorothiazide

(c) Triamterene (d) Furosemide

32. 2-hydroxy-5,9-dimethyl-6,7-benzomorphane derivative is

(a) Pentazocine (b) Hydrocodone

(c) Codeine (d) Buprenophine

33. The raw materials used for the synthesis of Sulfalen are

(a) 4-acetamido benzene sulfonyl chloride and 2-amino-4-methly pyrimidine

(b) 4-acetamido benzene sulfonyl chloride and 5-amino-2-ethly-1,3,4-thiadiazole

(c) 4-acetamido benzene sulfonyl chloride and5-amino-3,4-dimethly isoxazole

(d) 4-acetamido benzene sulfonyl chloride and 3-amino-2-methoxy pyrazine

34. Phexon benzamine can be prepared from

(a) Phenol and propylene oxide (b) 3-phenylpropanol

(c) Phthalic anhydride (d) b-phenyl succinic acid

35. Glyeyrrhizin, a sweet principalof liquorice is

(a) K and Mg salts of glycyrrhizinic acid
(b) Na and Mg salts of glycyrrhetinic acid
(c) K and Ca salts of glycyrrhizinic acid
(d) Na and Ca salts of giycyrrhetinic

36. Alloploids are polyploids derived from

(a) A single parental species genomes
(b) More thanone parental species genomes
(c) A plantwith haploid number of chromosomes
(d) A plant with diploid number of chromosomes

37. The most effective method for producing virus-free plants is

(a) Root culture
(b) Meristem culture
(c) Somatic embryogenesis
(d) Floriculture

38. A person Taking organic nitrate has to avoid one of the following drugs as it can cause severe hypotension

(a) Aspirine (b) Cholestyramine (c) Warfarin (d) Sildenafil

39. To avoid lithium toxicity,a patient using lithium carbonate for mood disorders should not be prescribed

(a) Acetazolamide
(b) Hydrochlorthiazide
(c) Mannitol
(d) Porpranolol

40. A selective serotonin reuptake inhibitor used as an antidepressant is

(a) Venlafaxine (b) Selegiline (c) Phenelzine (d) Amoxapine

41. A patientreceiving Digoxinfor CCF is found tohave elevatedserumcholesterol. Which hypolipidemic agent should not be prescribed

(a) Clofibrate (b) Cholestyramine (c) Lovastatin (d) Niacin

42. In thestudy ofenzyme kinetic, V_{max} is saidtobe attained when

(a) There is an excess of free enzyme as compared to the substrate
(b) Virtually all of the enzyme is present as the enzyme-substrate complex and concentration of the free enzyme is vanishingly small
(c) The maximum velocity of the reaction in the presence of low substrate concentration
(d) When the concentration of free enzyme equals that of the enzyme-substrate complex

43. Serum sampleof apatient shows elevated levels of g-glutamyl transerase.The patient could be suffering from

(a) Kidney disorder
(b) Liver disease
(c) Parkinson's disease
(d) Myocardial infraction

44. Acid-fast organisms are seen in the sputum of a 48-year old alcoholic man. A test to confirm whether he needs long-term multi-drug treatment for tuberculosis is

(a) Chest X-ray
(b) Ziehl-Neelsen stain of the sputum
(c) Sputum cytology
(d) Mycobacterial cultures of the sputum

45. The distinguishing feature in IR spectra between propinaldehyde and acetone is

(a) Weak-CH stretching and out of plane bending in propionaldehyde
(b) Keto group in acetone
(c) Two methyl group acetone
(d) $-CH_2$ group in propionaldehyde

46. Nephelometrical measurement are most sensitive for

(a) Clear solution (b) Concentrated solution

(c) Thick suspensions (d) Very dilute suspension

47. Thenumber of peaks shownby diethyl ether in an NMR spectrum are

(a) Four (b) Two (c) One (d) Five

48. The half-life for a zero order reaction is calculated using

(a) $t_{1/2}$=0.693/k (b) $t_{1/2}$=2.303/k (c) $t_{1/2}$=1/ak (d) $t_{1/2}$=a/2k

49. The biological half-lifeof procaine in patient was 35 minutes and its volume of distribution was estimated to be 60 L. The total clearance rate of procaine is

(a) 1.1881L/min (b) 0.115L/min (c) 11.5L/min (d) 5.57L/min

50. The ratio of the void volume to the bulk volume of the packing of the powder is called as

(a) Porosity (b) True density (c) Granular density (d) Bulk density

51. A co-solvent used in the preparation of parenteral products is

(a) Benzyle alcohol (b) Methyl alcohol (c) Dimethyl acetamide (d) Phenol

(Q.52-58)

MULTIPLE SELECTION ITEMS.P,Q,R,S ARE OPTION.TWO OF THESE OPTIONARE CORRECT. CHOOSEN THE CORRECT COMBINATION AMONG A,B,C AND D.

52. In mass spectroscopy,positively charged ionsbe produced by

(P) Heating of the sample

(Q) Bombarding the sample with high energy electrons

(R) Bombarding the sample with highenergy protons

(S) Chemical ionisation

(a) Q, S (b) Q, R (c) P, R (d) P, S

53. A plastisizer and ahigh boiling point solvent used in the preparation of nail lacquers are

(P) Butyl stearate (Q) Ethyl lactate

(R) Ethyl alcohol (S) Acetone

(a) P, Q (b) Q, S (c) R, S (d) Q, R

54. Two of the following attributes are true for describing

(P) Neuromuscular blocking causing spastic paralysis

(Q) Blocks the response of the Ascaris muscle to ACH, causing flaccid paralysis in the worms

(R) Inhibits the Helminth specific enzyme fumarate reductase

(S) Arrest nematode cell divisions in metaphase by interfering with microtubule assemble

(a) P, Q (b) P, R (c) Q, S (d) Q, R

55. The colour and flavor of saffron are due to –

(P) Crocin (Q) Crocetin (R) Safranal (S) Crepenyic acid

(a) R, S (b) P, R (c) Q, S (d) Q, R

56. Predict the two impurities which are likely to be present in Glipizide

(P) 5-methyl-N-[2-(4-sulphamoyl phenyl ethyl] pyrazin-2- carboxamid

(Q) 5-methyl-N-[2-(2-sulphamoyl phenyl] pyrazine-2-carboxamide

(R) Cyclohexanamine

(S) Cyclohexane

(a) P, R (b) P, Q (c) R, Q (d) R, S

57. Calcipotrience, synthetic vitamin D_3 analogue has the following attributes

(P) Pronounced antirachitic activity

(Q) Inhibits epidermal sell proliferation and enhances cell differentiation

(R) Used as a topical application in the treatment of moderate plaque psoriasis

(S) Effect on calcium metabolism is 200 times more than Ergocalciferol

(a) Q, R (b) P, Q (c) R, S (d) Q, S

58. Insulin when released from the pancranic b cells

(P) Can sequester blood glucose by forming a complex with it.

(Q) Gets full conjugated with glucuranic acid immediately, to be released upon suitable stimuli in normal health.

(R) Acts on the transporter molecules to facilitate glucose movement across the cell membranes

(S) Increases storage of glucose to glycogen in the liver

(a) R, S (b) P, R (c) Q, S (d) Q, P

(Q. 59-65) ARE "MATCHING" EXERCISES.
MATCH GROUP I WITH GROUP II CHOOSE THE CORRECT COMBINATION AMONG THE ALTERNATIVES A,B,C AND D.

59.

Group- I	**Group- II**
(P) Ascrobic acid	(1) TBAH
(Q) Pyridoxine HCl	(2) Iodine
(R) Dapsone	(3) $HClO_4$
(S) Fluorouracil	(4) Sodium nitrite

(a) P -1, Q-4, R-3, S-2 (b) P -1, Q-4, R-3, S-2

(c) P -4,Q-2, R-1, S-3 (d) P -3,Q-2, R-4, S-1

60.

Group- I	**Group- II**
Umbelliferous fruit	**Diagnostic character**
(P) Fennel	(1) Wavy sclerenchyma
(Q) Indian Dill	(2) Branched and unbranched vittae
(R) Coriander	(3) Reticulately lignified parenchyma
(S) Anise	(4) Lateral ridges with vascular bundles

(a) P-1, Q-2, R-3, S-4 (b) P-3, Q-4, R-1, S-2

(c) P-2, Q-3, R-4, S-1 (d) P-4, Q-1, R-2, S-3

61. **Group- I**
Enzyme systems responsible for Phase 2 conjugation pathways

(P) UPD-glucuronsyl transferase
(Q) ATP-sulfurylase &APS-Phosphokinase
(R) Acyl synthatase & transacetylase
(S) ATP-methioneine adensine transferase and methyl transferase

Group- II
Types

(1) N-methylation
(2) Sulphate conjugation
(3) Glucuronidation
(4) Aminoacid conjugation

(a) P-1, Q-4, R-3, S-2
(b) P-2, Q-3, R-1, S-4
(c) P-3, Q-2, R-4, S-1
(d) P-4, Q-1, R-2, S-3

62. **Group-I**
Drug

(P) Levofloxacine
(Q) Econazole
(R) Pentostatine
(S) Procarbazine

Group-II
Mechanism

(1) Inhibits adenosine deaminase
(2) Inhibits topoisomerase II
(3) Forms adducts with DNA
(4) Interferes with aminoacid transport by action on the membrane

(a) P -3, Q-2, R-1, S-4
(b) P -2, Q-4, R-1, S-3
(c) P -1, Q-2, R-4, S-3
(d) P -4, Q-2, R-3, S-1

63. **Group-I**
Terms

(P) Saturated air
(Q) Dew point
(R) Humid volume
(S) Humidity

Group-II
Explanation

(1) Pounds of water vapour carried by one pound of dry air under any given set of conditions
(2) The water vapour is in equilibrium with liquid Water at the given conditions of temperature and pressure
(3) The volume is cubic feet occupied by one Pound of dry air and its accompanying water vapour
(4) Temperature to which a mixture of air and Water vapour must be cooled in order to Become saturated

(a) P -1, Q-4, R-2, S-3
(b) P -4, Q-3, R-1, S-2
(c) P -3, Q-1, R-4, S-2
(d) P -2, Q-4, R-3, S-1

64. **Group-I** **Group II**

Antibiotic **Test organism for microbiological assay IP**

(P) Bleomycin (1) *Pseudomonas areuginosa*

(Q) Nystatin (2) *Mycobaterium segmatis*

(R) Carbenicillin (3) *Bacillus subtilis*

(S) Streptomycin (4) Saccharomyces cerevisiae

(a) P -2, Q-4, R-1, S-3 (b) P -4, Q-1, R-3, S-2

(c) P -3, Q-2, R-4, S-1 (d) P -3, Q-1, R-2, S-4

65. **Group-I** **Group-II**

Pathoimmunological condition **Drugs used in the treatment**

(P) Uraticaria (1) Cyclosporin

(Q) Autoimmune thrombocytopenia (2) Anthihistamines

(R) Rheumatoid arthritis (3) Intravenous immunoglobulin

(S) Organ transplant rejection (4) Glucocorticoids

(a) P -1, Q-2, R-4, S-3 (b) P -4, Q-1, R-3, S-2

(c) P -3, Q-1, R-2, S-4 (d) P -2, Q-3, R-4, S-1

DATA FOR Q.66-80 ARE BASED ON THE STATEMENT/ PROBLE.CHOOSE THECORRECT ANSWER FOR QUESTION FROM THE OPTION A,B,C AND D

COMMON DATA FOR QUESTIONS 66,67

A sample of Cinnamoman zeylanicum purchased from the market was evaluated for its authencity.

66. It shows

(a) Presence of cork and cortex (b) Absence of cork and cortex

(c) Absence of phloem fibres (d) Presence of xylemparenchyma

67. Voltile oil should not be less than

(a) 0.05% (b) 0.20% (c) 0.50% (d) 1.00%

COMMON DATA FOR QUESTIONS 68, 69, 70

Choroactiacid and hydrazine are treated with X to get semicarbazido acetic acid in which ring closure takes place to 1-amino hydantoin. It is subsequently treated with 2-duacetoxy methyl-5-nitrofuran to get nitrofurantoin.

68. Reagent 'X' is

(a) Cuprous chloride (b) Potassium cyanate

(c) Silver nitrate (d) Mercurous chloride

69. Its IUPAC name is

(a) 1-(5-nitrofurfuryl)hydantoin (b) 1-(5-nitrofurfuryl hydroxy)hydantoin

(c) 1-(5-nitrofurfuryl amino)hydantoin (d) 1-(5-nitrofurfuryl nitro)hydantoin

70. Its gastrointestinal tolerance can be improved without interfering with oral absorption by preparing a

(a) Solid dispersion (b) Prodrug

(c) Large cyrsalline form (Macrodantian) (d) Suspension

COMMON DATA FOR QUESTIONS 71, 72

A compound 'X' with molecular formula C_2H_4O exhibitsa strong absorption band at 1730 cm^{-1} in IR spectrum. On reduction is converted into 'Y' which shows a strong band at 3640 cm^{-1}.

71. Assingn the band in X to

(a) CH_3 (b) C=C (c) C=O (d) $CH_2C=O$

72. The strong band in Y is due to

(a) –C-C (b) –C-O-C- (c) $=CH_2$ (d) –OH

COMMON DATA FOR QUESTION 73, 74, 75

In the management of asthma, the drugs used are salmeterol , Zafirlukast, Budesoide ,Nedocromil sodium and Bambuterol

73. Zafirlukast acts as

(a) b_2 adrenoceptor agonist (b) Cysteinyl-leukotriene receptor antagonist
(c) Muscarinic receptor antagonist (d) Antihistamine

74. A prodrug of terbutaline is

(a) Zafirlukast (b) Salmeterol
(c) Bambuterol (d) Nedocromil sodium

75. Warfarin interacts with this antiasthmatic drug and increases prothrombin time

(a) Budesonide (b) Zafirlukast (c) Salmeterol (d) Bambuterol

COMMON DATA FOR QUESTIONS 76, 77, 78

In a pharmaceutical industry, batch filtration of liquids where the proportionof solids t liquids is high is to be carried out. The complete recovery of solids is required. After filtration, the filtrate, which is corrosive, gives a crystalline product on evaporation. The liquid tends to deposit scales or crystals on the heating surface during evaporation.

76. The suitable filtration equipments is

(a) Plate and frame filter press (b) Leaf filters
(c) Meta filters (d) Membrane filters

77. The filter aid used in the above filtration is

(a) Sand (b) Nylon fiber cloth
(c) Activatedcarbon (d) Filter paper

78. A suitable evaporator is

(a) Falling filmevaporator (b) Forced circulation evaporator
(c) Vertical (d) Horizontal evaporator

COMMON DATA FOR QUESTION 79, 80

Isoprenoid biosynthesis is involved in the production of many biologically important compounds such as cholesterol. Steroid hormones, Vitamin K, Vitamin E and bile acid.

79. HMG-CoA reductase, a key enzyme in the pathway, catalyzes

(a) Side-chain cleavage in the conversion of cholesterol to steroid hormones.

(b) The reduction of the thio-ester group to an alcohol in mevalonate biosynthesis.

(c) The reduction of the hydroxyl group mevalonate to Vitamin D.

(d) Steroid condensation reaction in biosynthesis of bile acids.

80. The inhibition of HMG-CoA reductase is a strategy used in the treatment of

(a) Familial hypercholesterolemia (b) Vitamin K deficiency

(c) Inflammation in the joints (d) Hepatic parenchymal diseas

LINKED ANSWER QUESTIONS : Q. 81a TO Q. 85b CARRY TWO MARKS EACH

Statements for linked Answer Questions 81a & 81b:

A person after orthopaedic surgery is prescribed a selective COX-2 inhibitor

81a. The selective COX-2 inhibitor is

(a) Ketorolac (b) Refecoxib (c) Indomethacin (d) Naproxen

81b. The drug selected is not be given, if the patient is already tacking

(a) Antiallergic drugs (b) Anxiolytic drugs

(c) Antihypertensive drugs (d) Oral antidiabetic agents

Statement for Linked Answer Questions 82a & 82b:

A drug solution has an initial potency of 300 mg/10 ml. When stored in a refrigerator for 30 days, its potency was found to be 100mg/ 10ml

82a. The rate constant, assuming that the drug solution undergoes first order kinetics, is

(a) 0.0366 day^{-1} (b) 0.0074 day^{-1} (c) 0.0174 day^{-1} (d) 0.0506 day^{-1}

82b. Half-life of thedrugs solution, under these condition is

(a) 9.4 days (b) 19 days (c) 47 days (d) 4.7 days

Statement for Linked Answer Questions 83a & 83b

Ginger is a widely used herbal drug, containing many chemical constituents.

83a. The pungent principal present in it, is

(a) Zingiberol (b) Zingiberene (c) Gingerol (d) Cineole

83.b. It's decomposition product, on boiling with 2% KOH is

(a) Zingiberone (b) Shogaol

(c) Gingedio (d) Gingediol acetate

Statement for Linked Answer Questions 84a & 84b:

2,6-dimethylphenol and chloroacetone reaction gives 'X', whichon treatment with hydroxylamine and hydrochloric acid gives intermediate product. This on further treatment with Raney nickel in acid, givesthe final product.

84.a. The product 'X' is

(a) 1-(2,6-Dimethyl phenoxy)-2-propanone (b) 1-(2,6-Dimethyl phenoxy)-2-butanone

(c) 1-(2,6-Dimethyl phenoxy)-2-isopropanone (d) 1-(2,6-Dimethyl phenoxy)-2-pentanone

84b. The finalproduct is

(a) 1-methyl-2-(2,6-xylyloxy) isopropylamine (b) 1-methyl-2-(2,6-xylyloxy) ethylamine

(c) 1-methyl-2-(2,6-xylyloxy) buylamine (d) 1-methyl-2-(2,6-xylyloxy) pentylamine

Statement for Linked Answer Questions 85a & 85b:

An organic compound 'X' has an absorption maximaat 217 nm.Its e_{max} is 16,000. The absorbance is 0.64 when the cell length is 1 cm.

85a. The molar concentration of 'X' is

(a) 5×10^{-5} (b) 4×10^{-5} (c) 4×10^{-4} (d) 5×10^{-2}

85b. The moral weight is 56.06, its concentration in gms/ml is

(a) 2.5×10^{-6} (b) 0.25×10^{-6} (c) 5×10^{-5} (d) 2.24×10^{-6}

End of paper

ANSWER KEY GATE 2005

1 – b	2 – c	3 – d	4 – b	5 – a	6 – c
7 – d	8 – c	9 – a	10 – d	11 – b	12 – b
13 – c	14 – b	15 – d	16 – c	17 – a	18 – c
19 – d	20 – a	21 – c	22 – b	23 – d	24 – b
25 – a	26 – b	27 – b	28 – c	29 – d	30 – b
31 – a	32 – a	33 – d	34 – a	35 – c	36 – b
37 – b	38 – d	39 – b	40 – a	41 – b	42 – b
43 – b	44 – d	45 – a	46 – a	47 – b	48 – d
49 – b	50 – a	51 – c	52 – a	53 – a	54 – b
55 – b	56 – a	57 – c	58 – b	59 – b	60 – b
61 – c	62 – b	63 – d	64 – a	65 – d	66 – b
67 – d	68 – b	69 – c	70 – c	71 – c	72 – d
73 - b	74 – c	75 – b	76 – a	77 – a	78 – a
79 – b	80 – a	81 – a, b	81 - b, c	82 – a, a	82- b, b
83 – a, c	83 – b, b	84 – a, a	84 – b, b	85 – a, b	85 – b, d