

1. Who is the Indian father of Ecology?
(Pg. 218, E)
A) E. Hackel B) Ramdeo Mishra
C) P. Odum D) Tansley

13.1 Organism and its Environment

2. For what is the interaction among organisms is necessary (Pg. 220, E)
A) Recreation B) Reproduction
C) Survival D) Both B and C
3. Basic unit of ecological hierarchy is- (Pg. 220, E)
A) Population B) Community
C) Ecosystem D) Organism
4. Identify the following which is not correctly matched - (Pg. 220, E)

	Biome	Mean annual temp. (°C)	Mean annual precipitation (mm)
1	Tropical forest	20-25	130-430
2	Arctic and alpine	-12-2	10-125
3	Coniferous forest	-5-5	100-200
4	Temperate forest	8-22	5-225

- A) 3 B) 1
C) 2 D) 4
5. Different biomes are formed due to annual variations in _____ over the earth's surface. - (Pg. 220, E)
A) Temperature
B) Precipitation
C) Incident of solar radiation
D) All of these
6. Deserts, rainforests, tundra, etc. are example of - (Pg. 221, E)
A) Community B) Niche
C) Biomes D) Ecosystem
7. The key element that determines difference in environment conditions of different habitats include. - (Pg. 221, E)
A) Temperature B) Light

- C) Soil D) All of these

13.1.1 Major Abiotic Factors

8. Study the following statement and select the correct ones. - (Pg. 221, E)
i) Organisms capable to tolerate a wide range of temperature are called stenothermal organisms.
ii) Thermal tolerance of different species determines their geographical distribution to a large extent.
iii) Average temperature in tropical desert in summer is <50°C.
iv) Thermal spring cannot sustain life due to very high avg. temperature i.e. >100°C.
A) ii B) i, iii, iv
C) i, ii, iv D) iv
9. Organism which tolerate narrow range of temperature-- (Pg. 222, E)
A) Stenothermal B) Eurithermal
C) Eurihaline D) None of these
10. Mango tree do not grow in (Pg. 222, E)
A) Temperate country
B) Tropical country
C) Sub-tropical country
D) None of these
11. Mango do not and cannot grow in the above region. The most important environmental factor responsible for it is- (Pg. 222, E)
A) Soil B) Temperature
C) Water D) Light
12. Snow leopard are not found in _____ and tuna fish rarely caught beyond _____ latitudes in the ocean. (Pg. 222, E)
A) Tropical, Kerala
B) Kerala, tropical
C) Kerala, temperate
D) Kerala, sub-tropical
13. Organism which tolerate wide range of temperature?
A) Eurithermal B) Stenothermal
C) Stenohaline D) None of these
14. Match the following salinity. (Pg. 222, E)

1	Sea	a	5
2	Hypersaline Lagoons	b	30-35
3	Inland water	c	>100

1 2 3

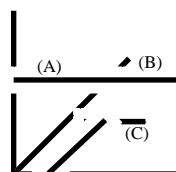
- A) a c b
 B) b c a
 C) c a b
 D) b a c

15. A fresh water organisms cannot survive in a water body that has greater _____ than its original habitat- **(Pg. 222, E)**
 A) Nutrients B) Depth
 C) Salt concentration D) Water clarity

13.1.2 Responses to Abiotic factor

16. The organism try to maintain the constancy of its internal environment and the process is called **(Pg. 223, E)**
 A) Hibernation B) Aestivation
 C) Homeostasis D) None of these

17. **(Pg. 223, E)**



- A) A-Regulators, B-Conformers, C-Partial Regulator
 B) A-Conformers, B-Regulators, C-Partial Regulator
 C) A-Partial Regulator, B-Regulators, C-Conformers
 D) A-Conformers, B-Partial Regulators, C-Regulator
18. Regulators maintain homeostatic by which means- **(Pg. 224, E)**
 A) Chemical B) Physiological
 C) Behavioural D) Both B and C
19. We maintain constant body temperature of- **(Pg. 224, E)**
 A) 39° C B) 37° C
 C) 33° C D) 34° C
20. The organism in which body temperature changes according to the ambient temperature is known as **(Pg. 224, E)**
 A) Conformers B) Regulator
 C) Partial Regulators D) Endothermal

21. Thermoregulation is energetically expensive process for **(Pg. 224, E)**

- A) Shrews B) Mammals
 C) Humming bird D) Both A and C

22. Thermoregulation is energetically expensive process for small animals due to their- **(Pg. 224, E)**

- A) Small surface area relative to their size
 B) Large size relative to surface area
 C) Both B and A
 D) Large surface area relative to size

23. The organism which moves away temporarily from stressful situation is known as- **(Pg. 225, E)**

- A) Migrators B) Conformers
 C) Regulators D) Endothermals

24. Keolado National Park is situated in **(Pg. 225, E)**

- A) Rajasthan B) Raipur
 C) Gujarat D) Madhya Pradesh

25. Match the following **(Pg. 223-225, M)**

A		B	
1	Regulators	i	Humming birds
2	Conformers	ii	Shrenes
3	Migrators	iii	Mammals
4	Suspendors	iv	Siberian birds
		v	Bacteria, fungi and lower plants

1 2 3 4

- A) i, ii iii iv v
 B) iii i, ii v iv
 C) iii i, ii iv v
 D) iv iii i, ii v

26. A stage of suspended development is called **(Pg. 225, E)**

- A) Diapause B) Aestivation
 C) Hibernation D) Migration

27. Winter sleep is known as _____ and summer sleep is known as _____. **(Pg. 225, E)**

- A) Hibernation, Aestivation
 B) Migration, Aestivation
 C) Aestivation, Hibernation
 D) Aestivation, Migration

28. Match the following **(Pg. 225, M)**

A		B	
1	Bear	i	Aestivation

2	Zooplankton	ii	Migration
3	Snail	iii	Hibernation
4	Siberian crane	iv	Diapause

- | | 1 | 2 | 3 | 4 |
|----|-----|-----|-----|----|
| A) | ii | iv | iii | i |
| B) | iii | iv | i | ii |
| C) | iii | i | iv | ii |
| D) | iv | iii | ii | i |

13.1.3 Adaptation

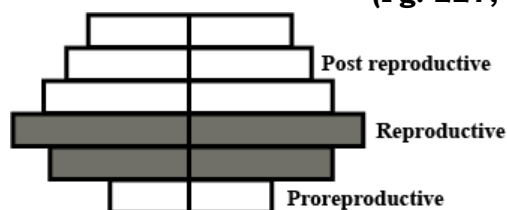
29. Any attributes of the organism that enable them to survive and reproduce its habitat is known as **(Pg. 225, E)**
 A) Migration B) Diapause
 C) Adaptation D) Dormancy
30. Kangaroo rat in _____ American deserts is capable to meet all its water requirement through _____. **(Pg. 225, E)**
 A) East, internal fat oxidation
 B) North, internal fat oxidation
 C) North, internal protein oxidation
 D) West, internal fat oxidation
31. Desert plants have special photosynthetic pathway which is known as-**(Pg. 225, E)**
 A) C3 cycle B) C4 cycle
 C) CAM pathway D) None of these
32. Desert plant do not have following one characteristics-
 A) Bread leaf B) Flattened stem
 C) Sunken stomata D) Thick cuticle
33. Mammals from Colder climates generally have shorter ears and limbs to minimize the heat loss. This Rule was give by-
(Pg. 226, E)
 A) Charles Darwin B) Jansely
 C) P. Odum D) Allen
34. Desert lizard manage to keep their body temperature constant by _____ means. **(Pg. 226, E)**
 A) Physiological B) Behavioural
 C) Chemical D) Both A and B
35. Many marine aquatics lives in very high pressure. Which type of adaptation shown by them? **(Pg. 226, E)**
 A) Biochemical B) Behaviourals
 C) Physical D) None of these
36. Altitude sickness in high altitude is due to-

(Pg. 226, E)

- A) Low atmospheric pressure
 B) Low oxygen
 C) High atmospheric pressure
 D) Both A and B

13.2 Population Attributes

37. What is a group of individual belonging to the same species called- **(Pg. 227, E)**
 A) Population B) Biomes
 C) Community D) Family
38. _____ links ecology to population genetics and evolution **(Pg. 227, E)**
 A) Ecosystem
 B) Biomes
 C) Population ecology
 D) Population attributes
39. Population has certain attributes which are- **(Pg. 227, E)**
 A) birth rates B) death rates
 C) sex ratio D) All of these
40. If the age distribution is plotted for the population, the resulting structure is called- **(Pg. 227, E)**
 A) Population attributes
 B) Population ecology
 C) Age pyramids
 D) None of these
41. What type of human population is represented by the following are pyramid? **(Pg. 227, E)**



- A) Stable population
 B) Declining population
 C) Expanding population
 D) Vanishing population
42. The tiger census in our national parks and tiger reserves is after based on- **(Pg. 227, E)**

- A) Pug marks
 B) Fecal pellets
 C) Counting no. of tigers
 D) Both A and B

43. _____ is more meaningful measures of the population size of parthenium

(Pg. 228, E)

- A) Total no. B) Biomass
C) Age D) None of these

44. The age distribution of a population is determined by:

(Pg. 228, E)

- A) Timing of birth
B) Timing of death
C) The rate at which the population is growing
D) All are correct

13.2.2 Population Growth

45. What four factors define population growth?

(Pg. 228, E)

- A) Birth, deaths, immigration, emigration
B) Survivorship, age-specific mortality, fecundity, death rate
C) Mark-capture, census, sampling, transects
D) Age-specific birth rates, Metapopulation structure, quad rate, ectone

46. _____ contribute to an increase in population density

(Pg. 228, E)

- A) Natality and emigration
B) Mortality and emigration
C) Mortality and Immigration
D) Natality and Immigration

47. _____ refers to the no. of deaths in the population during a period.

(Pg. 228, E)

- A) Natality B) Immigration
C) Mortality D) Birth rate

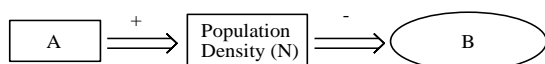
48. If N is the population density at time t, then its density at time t + 1 is

(Pg. 228, E)

- A) $N_{t+1} = N_t + (B + E) - (D + I)$
B) $N_{t+1} = N_t + (B + D) - (E + I)$
C) $N_{t+1} = N_t - (B + I) - (D + E)$
D) $N_{t+1} = N_t + (B + I) - (D + E)$

49. Fill up A and B Boxes in the given diagram with correct options:

(Pg. 229, E)



- A) A = Natality + Immigration, B = Mortality + Emigration

B) A = Natality + Mortality, B = Immigration + Emigration

C) A = Birth rate + Death rate, B = Migration + Emigration

D) A = Natality + Emigration, B = Mortality + Immigration

50. A biologist studied the population of rates in a born. He found that average Natality was 260, average Mortality 250, Immigration 30 and emmigration 40. The net increase in population is-

(Pg. 229, E)

- A) 10 B) 0
C) 15 D) 20

51. The formula for exponential population growth is

(Pg. 229, E)

- A) $dt/dN = rN$ B) $dN/rN = dt$
C) $rN/dN = dt$ D) $dN/dt = rN$

52. Which of the following is not a factor that would limit the growth of population?

(Pg. 229, E)

- A) Food shortage B) Immigration
C) Disease D) Famine

53. Birth rate = B, Death rate = D, Emigration = E and Immigration = I

(Pg. 229, E)

Column I		Column II	
a	Population is increasing	i	$B + I = D + E$
b	Population is decreasing	ii	$B + I < D + E$
c	Population is stable	iii	$B + I > D + E$

- a b c
A) iii ii i
B) ii iii i
C) i ii iii
D) ii i iii

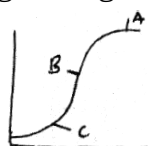
54. Darwinian fitness is represented by

(Pg. 230, E)

- A) Low r value B) High r value
C) High k value D) Low k value

55. What are Labelled phase A, B and C in given sigmoid growth curve?

(Pg. 230, E)



- A) A-Lag, B-Log, C-Stationary

- B) A-Stationary, B-Log, C-Lag
C) A-Lag, B-Stationary, C-Log
D) A-Stationary, B-Lag, C-Log
56. Carrying capacity is denoted as **(Pg. 230, E)**
A) r B) N
C) K D) I
57. Figure For calculation of the r value, which of the following is required? **(Pg. 230, E)**
A) Birth rates B) Death rates
C) Both a and b D) None
58. Which of the following equation is correct for Logistic growth? **(Pg. 231, E)**
A) $N_t = N_0 e^{rt}$
B) $dN/dt = rN$
C) $dt/dN = rN (K-N/K)$
D) $dN/dt = rN (K-N/K)$
59. _____ refers to the no. of births during a given period in the population that are added to the initial density. **(Pg. 231, E)**
A) Natality B) Mortality
C) Immigration D) Survival
60. Logistic curve is _____. **(Pg. 231, E)**
A) L-shaped B) J-shaped
C) Sigmoid curve D) None of these
61. A plot of N in relation to time (t) results in sigmoid curve. This type of population growth is called- **(Pg. 231, E)**
A) J shaped Curve
B) U shaped Curve
C) Verhulst-Pearl Logistic Growth
D) Constant Growth
62. $N_t = N_0 e^{rt}$ is the integral form of the exponential- growth equation
Which of the following statement related to equation is not correct: **(Pg. 231, E)**
A) N_t = Population density after time t
B) N_0 = Population density at time zero
C) r = Intrinsic rate of Natural decrease
D) e = The base of Natural logarithmics (2.71828)
63. Which growth model is considered as more realistic one? **(Pg. 230, E)**
A) Exponential growth
B) Constant growth
C) Logistic growth
D) None of these

64. A population growing in a habitat with limited resources show initially a __ (A) __ followed by phase of __ (B) __ and finally __ (C) __. **(Pg. 230, E)**
A) A-Lag phase, B-Acceleration and deceleration, C-an asymptote
B) A-Log phase, B-Acceleration and deceleration, C-an asymptote
C) A-Log phase, B-Acceleration and deceleration, C-a symptote
D) A-Log phase, B-Acceleration and deceleration, C-a symptote
65. To calculate the current r value for human population we need to know about **(Pg. 230, E)**
A) Birth rate B) Death rate
C) Carrying capacity D) Both A and B
66. Human population follows the _____ as the carrying capacity increase or we do not meet yet our population carrying capacity. **(Pg. 231, E)**
A) J-shaped growth curve
B) Z-shaped growth curve
C) S-shaped growth curve
D) All of the above

13.2.3 Life History Variation

67. Which of the following organism breeds only once on their life time? **(Pg. 232, E)**
A) Pacific salmon fish
B) Oyester
C) Bamboo
D) Both A and C
68. Which of the following organism produces a large no. of small sized offspring? **(Pg. 232, E)**
A) Pacific salmon fish
B) Oyester and pelagic fishes
C) Oyester and pacific salmon fish
D) Birds and mammals

13.2.4 Population Interaction

69. Match the following **(Pg. 232-238, H)**

1	Both the species benefited	a	Amensalism
2	Both the species get harmed	b	Mutualism

3	One species get benefits	c	Pairasitism
4	One is harmed other species unaffected	d	Predation
		e	Competition

- A) 1-c, 2-b, 3-a, 4-d
 B) 1-b, 2-e, 3-c, d, 4-a
 C) 1-a, 2-e, 3-c, d, 4-b
 D) 1-b, 2-a, 3-c, d, 4-c
70. Prickly pear cactus caused havoc in the early 1920's in- **(Pg. 233, E)**
 A) Canada B) Austria
 C) India D) Australia
71. Which predator brought the control over the inversive growth of prickly pear cactus **(Pg. 233, E)**
 A) Moth B) Bollworm
 C) Caterpillar D) Grasshopper
72. (A) Chemical control methods are adopted in agricultural pest control, based on ability of predator to regulate prey population.
 (B) Penicilium and stryptomyees show Amensalism. **(Pg. 233, M)**
 A) A) Statement A is correct
 B) Statement B is correct
 C) Statement A and B both are correct
 D) Statement A and B are wrong
73. (A) Predators helps in maintaining species diversity in community.
 (B) It reduces the intensity of competition among competing prey species. **(Pg. 233, M)**
 A) Statement A is correct
 B) Statement B is correct
 C) Both statement is wrong
 D) Option A and B
74. Starfish Pisaster is **(Pg. 233, E)**
 A) Parasite
 B) Hemi-parasite
 C) Predator
 D) Prey of invertebrate
75. More than 10 species of vertebrates disappeared a year after removing the starfish from habitat is due to- **(Pg. 233, E)**
 A) interspecific competition
 B) Brood parasitism
 C) Intra specific competition
 D) None of these
76. Prey species defenses themselves through there behaviour- **(Pg. 233, E)**
 A) Camouflaged B) Highly distasteful
 C) Poisonous D) All of these
77. Which Butterfly is highly distasteful? **(Pg. 234, E)**
 A) Monarch Butterfly B) Viceroy Butterfly
 C) Queen Butterfly D) All of these
78. Butterfly is highly distasteful which is acquire by them by tending on poisonous weed during **(Pg. 234, E)**
 A) Caterpillar Stage B) Adult Butterfly
 C) Pupa State D) All of these
79. "Camouflage" means **(Pg. 234, E)**
 A) Cryptically coloured
 B) Feeding on young ones of other species
 C) Poisonous
 D) Feeding on own species
80. Darwin has given the statement of **(Pg. 234, E)**
 A) Survival of fittest
 B) Struggle for existence
 C) Both A and B
 D) None of these
81. Who has convinced that interspecific competition is a patent force in organic evolution? **(Pg. 234, E)**
 A) Darwin B) P. odum
 C) Jansely D) None of these
82. (A) It is generally believed that competition occurs when closely related species complete for same resources that are limiting.
 (B) Totally unrelated species could also complete for the same resource. **(Pg. 234, E)**
 A) A is true B is false
 B) Both A and B is false
 C) A and B both are true
 D) A is false and B is true
83. The feeding efficiency of one species might be reduced due to the interfering and inhibitory presence of the other species

- even if resource are abundant in known as- **(Pg. 234, E)**
- A) Interspecific predation
 - B) Interfering competition
 - C) Both A and B
 - D) commensalism
84. When certain exotic species are introduced in to a geographical area they become invasive mainly because: **(Pg. 235, E)**
- A) The invaded land has unlimited resources for the introduced species.
 - B) The population of the introduced species in the invaded land is very low.
 - C) Introduced species do not face any competition in the introduced land.
 - D) The invaded land does not have its natural predator.
85. What was the result, when all pisaster starfish were removed from an enclosed intertidal area, in a field experiment? **(Pg. 234, E)**
- A) Extinction of many invertebrate species
 - B) Increase in diversity of invertebrates
 - C) Inability of the pisaster to enter the area again
 - D) Replacement of pisaster by other starfish
86. A species whose distribution is restricted to a small geographical area because of the presence of a competitively superior species is found to expand its distributional range dramatically when the competing species is experimentally removed. This is called- **(Pg. 235, E)**
- A) Competitive Exclusion
 - B) Competitive Supremacy
 - C) Competitive Inclusion
 - D) Competitive Release
87. Which of the following is not a function of predators? **(Pg. 235, E)**
- A) They decrease the species competition in a community
 - B) They act as conduits for energy transfer across trophic levels
 - C) They help in stabilization of the ecosystem
 - D) They decrease the species diversity in a community
88. Connell's field experiment on the rocky sea coast of Scotland the larger and competitively superior barnacle *Balanus* dominates the intertidal area and excludes the smaller barnacle *Chthamalus* from that zone. This happened due to: **(Pg. 235, E)**
- A) Mutualism
 - B) Predation
 - C) Competition
 - D) Parasitism
89. The principle of competitive exclusion was stated by: **(Pg. 235, E)**
- A) Gause
 - B) C. Darwin
 - C) MacArthur
 - D) Connelli
90. Gause's principle of competitive exclusion states that: **(Pg. 235, E)**
- A) More abundant species will exclude the less abundant through competition
 - B) Larger organism will exclude smaller one
 - C) No two closely related species can occupy same niche indefinitely for the same limiting resources
 - D) Both A and B
91. In resource partitioning mechanism- **(Pg. 235, E)**
- A) Species divide a niche to avoid competition for resources
 - B) Two different species eat the same thing at the same time of a day
 - C) Individuals of the same species that compete with each other
 - D) Two species that share the same niche
92. In accordance with their lifestyles, parasites evolved special adaptations such as _____. **(Pg. 235, E)**
- A) the loss of unnecessary sense organs
 - B) presence of adhesive organs or suckers to cling on to the host
 - C) loss of digestive system and high reproductive capacity
 - D) All of the above
93. The human liver fluke (a nematode parasite) depends on two intermediate host to complete its life cycle that is- **(Pg. 235, E)**
- A) insect and cow
 - B) insect and human
 - C) a snail and fish

- D) None of these
94. Mosquito is- **(Pg. 235, E)**
 A) Not a parasite B) Parasite
 C) Endoparasite D) Holoparasite
95. Parasites that feed on the external surface of the host organism are called- **(Pg. 235, E)**
 A) endoparasite B) ectoparasite
 C) Holoparasite D) Hemiparasite
96. Which one is/are the example of ectoparasite? **(Pg. 235, E)**
 A) Lice on human
 B) tick one dogs
 C) sea anemone and clown fish
 D) both A and B
97. Match the following: **(Pg. 235, M)**
- | | | | |
|---|--------------|-----|------------------|
| a | Marine fish | i | Brood parasitism |
| b | Cuscutta | ii | Copepods |
| c | Cattle egret | iii | Grazing cattle |
| d | Koel | iv | Parasite |
- a b c d
- A) ii iv iii i
 B) iii iv i ii
 C) iv ii iii i
 D) i iii iv ii
98. _____ are those that live inside the host body at different sites (Liver, kidney, lungs, red blood cells, etc) **(Pg. 235, E)**
 A) endoparasite B) ectoparasite
 C) Hemiparasite D) Both B and C
99. The life cycle of endoparasite are more complex why? **(Pg. 235, E)**
 A) Because of their complex morphology
 B) Because of their food habit
 C) Because of their extreme specialization
 D) All of these
100. Which of the following group do not comes under commensalism? **(Pg. 236, E)**
 A) Orchid growing on Mango branch
 B) Lichens and fungi
 C) Cattle egret and grazing cattle
 D) Sea Anemone and clown fish
101. Orchid grows as a _____ on a mango branch. **(Pg. 236, E)**
 A) Acrophyte B) Parasite

- C) Epiphyte D) Both A and B
102. Lichens represent an intimate mutualistic relationship between _____. **(Pg. 237, E)**
 A) Fungus and algae
 B) Cyanobacteria and fungus
 C) Archaeobacteria and fungus
 D) Both A and B
103. Mycorrhiza are associations between **(Pg. 237, E)**
 A) fungi and higher root plants
 B) fungi and algae
 C) Algae and lichen
 D) Both B and C
104. Who showed that 5 closely related species of Warblers living on same tree were able to avoid competition and co-exist by beharioural difference? **(Pg. 237, E)**
 A) C. Darwins B) Connell
 C) Mac Arther D) Gause
105. (A) The female wasp uses the fig fruit only for oviposition.
 (B) Female wasp shows commensalism. **(Pg. 237, E)**
 A) A and B both are correct
 B) A and B both are wrong
 C) A is correct B is wrong
 D) A is wrong and B is correct
106. The Mediterranean orchid employs _____ to get pollination done by a species of bee. **(Pg. 238, E)**
 A) Shelter B) Food
 C) Sexual deceit D) Egg-laying sites
107. Pseudocopulation is an example of- **(Pg. 238, E)**
 A) Wasp and fig B) Ophrys and bees
 C) Ophrys and warp D) None of these
108. If the female bee's colour pattern changes, the orchid flower co-evolves to maintain the resemblance of its petals for the successful pollination is known as **(Pg. 238, E)**
 A) Commensalism B) Protocooperation
 C) Co-evolution D) None of these

ANSWER KEY

ORGANISMS AND POPULATIONS

Q	1	2	3	4	5	6	7	8	9	10
Ans	B	D	D	A	D	C	D	A	A	A
Q	11	12	13	14	15	16	17	18	19	20
Ans	B	B	A	B	C	C	A	D	B	A
Q	21	22	23	24	25	26	27	28	29	30
Ans	D	D	A	A	C	A	A	B	C	B
Q	31	32	33	34	35	36	37	38	39	40
Ans	C	A	D	B	A	D	A	C	D	C
Q	41	42	43	44	45	46	47	48	49	50
Ans	B	D	B	D	A	D	C	D	A	B
Q	51	52	53	54	55	56	57	58	59	60
Ans	D	B	A	B	B	C	C	D	A	C
Q	61	62	63	64	65	66	67	68	69	70
Ans	C	C	C	A	D	A	D	B	B	D
Q	71	72	73	74	75	76	77	78	79	80
Ans	A	B	D	C	A	D	A	A	A	C
Q	81	82	83	84	85	86	87	88	89	90
Ans	A	C	B	D	A	D	D	C	A	C
Q	91	92	93	94	95	96	97	98	99	100
Ans	A	D	C	A	B	D	A	A	C	B
Q	101	102	103	104	105	106	107	108		
Ans	C	D	A	C	D	C	B	C		

NEET MBBS DOCTORS