

**Question Booklet & Answer Key**  
**for the Recruitment Test of**  
**Microbiologist**  
**held on 11.8.2013**



English Version

1. 'ਸ਼ਬਦ' ਕੀ ਹੈ?  
 (A) ਸ਼ਬਦ ਅਰਥਾਂ ਦੀ ਪੱਧਰ 'ਤੇ ਭਾਸ਼ਾ ਦੀ ਛੋਟੀ ਤੋਂ ਛੋਟੀ ਸੁੰਤਰ ਇਕਾਈ ਹੈ  
 (B) ਸ਼ਬਦ ਨਿਸਾਰਥਕ ਧੁਨੀਆਂ ਦਾ ਸਮੂਹ ਹੈ  
 (C) ਸ਼ਬਦ ਸਾਰਥਕ ਧੁਨੀਆਂ ਦਾ ਸਮੂਹ ਹੈ  
 (D) ਸ਼ਬਦ ਵਿਆਕਰਣਕ ਇਕਾਈ ਹੈ
2. ਸ਼ੁੱਧ ਸ਼ਬਦ ਦੀ ਚੋਣ ਕਰੋ:  
 (A) ਸਿਫਾਰਸ (B) ਸਿਫਾਰਸ਼ (C) ਸੀਫਾਰਸ (D) ਸ਼ੀਫਾਰਸ਼
3. ਕਿਹੜਾ ਸ਼ਬਦ 'ਲਾਭ' ਦਾ ਸਾਮਾਨਰਥੀ ਹੈ:  
 (A) ਵੇਚ (B) ਵੱਟ (C) ਘਾਟਾ (D) ਫ਼ਾਇਦਾ
4. ਕਿਹੜਾ ਸ਼ਬਦ ਕੰਡਾ ਸ਼ਬਦ ਦੇ ਬਹੁਅਰਥਕ ਵੱਜੋਂ ਨਹੀਂ ਵਰਤੀਆ ਜਾ ਸਕਦਾ :  
 (A) ਤੱਕੜ (B) ਸੂਲ (C) ਹੱਡੀ (D) ਕੰਢਾ
5. ਪੜਨਾਂਵ ਕਿੰਨੀ ਕਿਸਮ ਦੇ ਹੁੰਦੇ ਹਨ:  
 (A) ਚਾਰ (B) ਪੰਜ (C) ਛੇ (D) ਸੱਤ
6. ਸੰਖਿਅਕ ਵਿਸ਼ੇਸ਼ਣ ਦੇ ਕਿੰਨੇ ਰੂਪ ਮੰਨੇ ਜਾਂਦੇ ਹਨ:  
 (A) ਸੱਤ (B) ਛੇ (C) ਪੰਜ (D) ਚਾਰ
7. 'ਮਾੜੀ' ਕੀ ਹੈ:  
 (A) ਭਾਸ਼ਾ (B) ਵਿਆਕਰਣ (C) ਉਪਭਾਸ਼ਾ (D) ਇਲਾਕਾ
8. 'ਪੁਆਧ' ਕੀ ਹੈ:  
 (A) ਉਪ-ਭਾਸ਼ਾ (B) ਇਲਾਕਾ (C) ਭਾਸ਼ਾ (D) ਵਿਆਕਰਣ
9. ਲੱਤ ਅੜਾਉਣੀ ਦਾ ਕੀ ਅਰਥ ਹੈ:  
 (A) ਸੰਭਲਿਆ ਨਾ ਜਾਣਾ (B) ਚੁਗਲੀ ਕਰਨੀ  
 (C) ਸਿਫਤ ਕਰਨੀ (D) ਖਾਹ-ਮਖਾਹ ਦਖਲ ਦੇਣਾ
10. ਕਿਹੜਾ ਸ਼ਬਦ 'ਦਰਖਤ' ਦਾ ਸਾਮਾਨਰਥੀ ਹੈ:  
 (A) ਫਲ (B) ਫੁੱਲ (C) ਰੁੱਖ (D) ਟਹਿਣੀ

**Directions(Q.No. 11-15):-** Out of the four given options, choose the expression that best explains the meaning of the idioms given below:-

11. Not to mince matters  
 (A) to speak unreservedly (B) to speak with difficulty  
 (C) to abuse somebody (D) to indulge in meaningless conversation
12. To rest on one's oars  
 (A) stopping work for a time and having rest (B) to be engaged in some meaningless work  
 (C) to work with devotion (D) to do one's work sincerely
13. To let the grass grow under his feet  
 (A) to remain idle (B) to be full of passion  
 (C) to lead a life of opulence (D) to be a swift walker
14. To nail one's colours to the mast  
 (A) to refuse to surrender (B) to create a good painting  
 (C) to be an efficient sailor (D) to use light colours in one's paintings
15. To cut someone dead  
 (A) to deliberately insult someone by ignoring her/him (B) to murder someone brutally  
 (C) to ridicule someone (D) to cut someone into pieces

**Directions (Q.No.16-20) :-** Out of the four given options, choose the correct preposition to be filled into the gaps:-

16. India has always been amenable \_\_\_ peace.  
 (A) of (B) to (C) at (D) with

17. Ramesh's house is adjacent \_\_\_\_ my school.  
 (A) of (B) with (C) to (D) at
18. India's economy is beset \_\_\_\_ all kinds of problems.  
 (A) of (B) at (C) by (D) with
19. He seems to be weary \_\_\_\_ life.  
 (A) of (B) by (C) from (D) with
20. There is no early respite \_\_\_\_ heavy rains.  
 (A) of (B) from (C) by (D) with
21. Name the Gurudwara which stands where Guru Harkrishan breathed his last.  
 A) Bangla Sahib B) Ber Sahib – Sultanpur Lodhi  
 C) Kiratpur Sahib D) Goindwal Sahib
22. Prof. Mohan Singh Memorial International Cultural Mela is held at  
 A) Amritsar B) Ludhiana C) Patiala D) Jalandhar
23. The Supercop KPS Gill, belonged to which cadre?  
 A) Punjab B) Maharashtra C) Karnataka D) Assam
24. Who among the following is not related to the history of Adi Granth?  
 A) Bhai Gurdas B) Bhai Mani Singh C) Banda Bahadur D) Baba Budha
25. Kandi area, an important agro-climatic zone of Punjab, has following characteristics  
 1. Sub-mountainous undulating terrain 2. High cost of cultivation  
 3. Lack of perennial water source 4. Extremely fertile land  
 A) 1 and 2 are correct B) 1, 2 and 3 are correct  
 C) 2, 3 and 4 are correct D) 1, 2 and 4 are correct
26. When was the use of Punjabi made compulsory?  
 A) 1966 B) 1967 C) 1990 D) 1992
27. Who among the following was the first Akali Chief Minister of Punjab?  
 A) Giani Gurmukh Singh Mussafir B) Lachman Singh Gill  
 C) Giani Kartar Singh D) Justic Gurnam Singh
28. Dhyani Chand, famous hockey player belonged to  
 A) Madhya Pradesh B) Punjab C) Haryana D) Delhi
29. Which of the following is the correct span of Punjab in terms of latitude?  
 A) 12.30° North to 18.32° North B) 19.30° North to 28.32° North  
 C) 29.30° North to 32.32° North D) 39.30° North to 52.32° North
30. National Food Security Mission was introduced in Punjab during  
 A) 2007-08 B) 2009-10 C) 2006-07 D) 2010-11
31. Global rating agency S and P expects India to grow by 6.5% during 2013. It stands for  
 A) Sample and Perfect B) Standard and Poor's  
 C) Spain and Pakistan D) Standard and Poverty
32. With which country has India entered into an agreement for the development of 'Fifth Generation Fighter Aircraft (FGFA)?  
 A) USA B) Germany C) Russia D) Japan
33. Which is the largest Peninsula of the world?  
 A) Arabia B) Southern India C) Alaska D) Labrador
34. Indian Navy launched its new warship INS Kiltan. It is  
 A) anti-submarine B) anti-aircraft C) anti-piracy D) none of these

35. 'Laadli Laxmi Yojna' has been launched by \_\_\_\_\_ government for supporting girls of all religion and caste upto their marriage  
 A) Rajasthan B) Madhya Pradesh C) Gujarat D) Punjab
36. "If a God were to tolerate untouchability I would not recognize him as God at all." These words were spoken by  
 A) Gokhale B) Vivekananda C) Tilak D) Mahatma Gandhi
37. The 'Kutir Jyoti' proposal was made to provide electricity  
 A) to all homes of rural people B) to urban poor, free of cost  
 C) to homes of rural poor families below the poverty line D) to urban poor at moderate rates
38. The protein deficiency disease is known as  
 A) kwashiorker B) cirrhosis C) eczema D) clycoses
39. Right to property was removed from the list of Fundamental Rights during the rule of  
 A) Indira Gandhi Government B) Morarji Desai Government  
 C) Narsimha Rao Government D) Vajpayee Government
40. The first Indian to cross seven important seas by swimming  
 A) Amrendra Singh B) Bula Chaudhury C) Junko Taibei D) Yuri Gagarin
41. Complete the series 12, 36, 80, 150, 252, \_\_\_\_\_  
 A) 392 B) 504 C) 452 D) 412
42. In a certain code COVALENT is written as BWPDUOFM and FORM is written as PGNS. How will SILVER be written in that code?  
 A) MJTUDQ B) KHRSFW C) MJTWFS D) MJTSFW

**Read the following information and answer the questions given below (43-44).**

A is father of C, but C is not his son. E is daughter of C. F is the spouse of A. B is brother of C. D is the son of B. G is the spouse of B. H is the father of G.

43. Who is the grandmother of D?  
 A) C B) A C) F D) H
44. Who is the son of F?  
 A) B B) C C) D D) E

**Read the following information and answer Q.Nos. 45-46.**

In a car exhibition, seven cars of different companies viz. Cardilac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo were displayed in a row facing East such that

1. Cardilac car was to the immediate right of Fargo
2. Fargo was fourth to the right of Fiat
3. Maruti was between Amabssador and Bedford
4. Fiat, which was third to left of Ambassador, was at one of ends

45. Which of the following was the correct position of Mercedes?  
 A) immediate right of Cardilac B) immediate left of Bedford  
 C) between Bedford and Fargo D) fourth to right of Maruti
46. Which of the following is definitely true?  
 A) Maruti is to immediate left of Ambassador B) Bedford is to immediate left of Fiat  
 C) Bedford is at one of the ends D) Fiat is second to the right of Maruti
47. One evening, Shaan and Shyam were standing in a ground facing each other. The shadow of shyam was falling to his left, which direction was Shaan facing?  
 A) East B) North C) West D) South
48. In the sequence given below, how many 8s are there each of which is exactly divisible by its immediate preceding as well as succeeding numbers  
 2 8 3 8 2 4 8 2 4 8 6 8 2 4 8 3 8 2 8 6  
 A) 1 B) 0 C) 2 D) 4

49. Manoj and Sachin ranked 7<sup>th</sup> and 11<sup>th</sup> respectively from the top in a class of 31 students. What are their respective ranks from the bottom?  
 A) 20<sup>th</sup> & 24<sup>th</sup>      B) 24<sup>th</sup> & 20<sup>th</sup>      C) 25<sup>th</sup> & 21<sup>st</sup>      D) 26<sup>th</sup> & 22<sup>nd</sup>
50. Replace the question mark (?) from the options given below:
- |     |     |    |
|-----|-----|----|
| 1   | 3   | 7  |
| 5   | 12  | 14 |
| 25  | ?   | 28 |
| 125 | 192 | 56 |
- A) 64      B) 56      C) 48      D) 40
51. Three containers contain different quantities of mixture of milk and water, whose measurements are 403 kg, 434 kg and 465 kg. What biggest measure can be used to measure all different quantities exactly?  
 A) 1 kg      B) 7 kg      C) 31 kg      D) 41 kg
52. In a class, there are 2 sections A and B. If 10 students of section B shift to section A, the strength of A becomes three times of that of B. But, if 10 students shift over from A to B, both A and B are in equal strength. How many students are there in sections A and B?  
 A) 50 and 30      B) 45 and 15      C) 90 and 40      D) 80 and 40
53. Simplify  

$$\frac{38 \times 38 \times 38 + 34 \times 34 \times 34 + 28 \times 28 \times 28 - 38 \times 28 \times 34}{38 \times 38 + 34 \times 34 + 28 \times 28 - 38 \times 34 - 34 \times 28 - 38 \times 28} = ?$$
  
 A) 24      B) 32      C) 44      D) 100
54. In a class with a certain number of students, if one student weighing 50 kg is added then the average weight of class increases by 1 kg. If one more student weighing 50 kg is added, then the average weight of the class increases by 1.5 kg over the original average. What is the original average weight of the class?  
 A) 2 kg      B) 4 kg      C) 46 kg      D) 47 kg
55. The difference between the radii of the smaller circle and the bigger circle is 7 cm and the difference between the areas of two circles is 1078 cm<sup>2</sup>. Radius of smaller circle is  
 A) 17.5 cm      B) 21 cm      C) 28 cm      D) 27 cm
56. A dairyman buys milk at ₹ 6.40 per litre. He adds water and sells the mixture at ₹ 8 per litre, thereby making 37.5% profit. The proportion of water to milk received by the customer is  
 A) 1 : 10      B) 1 : 12      C) 1 : 15      D) 1 : 20
57. A, B and C enter into partnership. A invests some money in the beginning, B invests double the amount after 6 months and C invests thrice the amount after 8 months. If the annual profit be ₹ 27000, C's share is  
 A) ₹ 8625      B) ₹ 9000      C) ₹ 10800      D) ₹ 11250
58. Bombay Express left Delhi for Bombay at 14.30 hours, travelling at a speed of 60 km/hour and Rajdhani Express left Delhi for Bombay on the same day at 16.30 hours, travelling at a speed of 80 km/hour. How far away from Delhi will the two trains meet?  
 A) 120 km      B) 360 km      C) 480 km      D) 500 km
59. A sum of ₹ 5300 was taken as a loan. This is to be repaid in 2 equal installments. If the rate of interest be 12% compound annually, the value of each installment is  
 A) ₹ 3150      B) ₹ 3248      C) ₹ 3345      D) ₹ 3136
60. A pipe can fill a cistern in 12 minutes and another pipe can fill it in 15 minutes. But, a 3<sup>rd</sup> pipe can empty it in 6 minutes. The first two pipes are kept open for 5 minutes in beginning and then 3<sup>rd</sup> pipe is also opened. In what time is the cistern emptied?  
 A) 30 minutes      B) 33 minutes      C) 37 $\frac{1}{2}$  minutes      D) 45 minutes

61. The Thesaurus tool in MS-Word  
 A) finds repeated words in the document      B) gives synonyms and antonyms Words  
 C) checks for misspelled words as you type      D) none of the above
62. In MS-PowerPoint presentation, slide show can be started from:  
 A) Beginning Slide      B) Current Slide  
 C) Both A and B are correct      D) None of the option
63. Macros in MS-Power point can be recorded from:  
 A) Insert menu      B) Tools Menu      C) Edit Menu      D) Developer Menu
64. In a MS-Excel sheet, Cell A1 to A10 has certain values. In cell A11, you wish to find out the average of all the values which are less than 1000 in cell A1 to A10. What is command to do that?  
 A) =AVERAGE(A1 to A10, "<1000")      B) =AVERAGE(A1:A10, "<1000")  
 C) =AVERAGEIF(A1:A10, "<1000")      D) All are incorrect
65. In a MS-Excel sheet, Cell A2 has text "Rajesh", Cell A3 has Currency of "\$2000". In cell A4, you wish to place currency located in A3 with A2 contents such that 'A2 has salary A3'. What is command to do that?  
 A) =A2&" has salary "&TEXT(A3,"\$0.00")      B) =A2&" has salary "&A3  
 C) =A2&" has salary "&TEXT(A3,"\$")      D) All are incorrect
66. Agar is a polymer of  
 A. D-galactose and 3,6-anhydro-L-galactopyranose  
 B. D-galactose and N-acetylglucosamine  
 C. Galacturonic acid  
 D. Alginic acid
67. A bacterial population growing exponentially at a specific growth rate of 1.25 / h will have a generation time of  
 A. 0.55 h      B. 0.65 h      C. 0.85 h      D. 1.55 h
68. Which of the following precursor metabolites is produced only in HMP shunt pathway in *E. coli*  
 A. ribose- 5-phosphate      B. glyceraldehydes-3-phosphate  
 C. alpha- ketoglutarate      D. suucinyl CoA
69. Antibiotic that does not inhibit cell wall synthesis is  
 A. cycloserine      B. vancomycin      C. nalidixic acid      D. amoxycillin
70. In *E.coli*, lactose is transported through cell membrane by  
 A. active proton symport      B. facilitated diffusion  
 C. group translocation system      D. active binding protein transport
71. The phylogenetic classification of bacteria is based on  
 A. fatty acid analysis      B. DNA-DNA hybridization  
 C. 16S rDNA sequence analysis      D. G+C % content of DNA
72. Which of the following is a case of bioremediation  
 A. use of oil degrading bacteria in case of spilled oil sites  
 B. use of nitrogen fixing bacteria in fields to convert ammonia to nitrogen  
 C. use of bacteria in the sewage treatment and disposal  
 D. use of disinfectants in the removal of microbial load
73. In a fixed volume fed batch culturing, with time  
 A. Both dilution rate and growth rate will increase  
 B. Both dilution rate and growth rate will decrease  
 C. Substrate concentration will increase but biomass concentration will decrease  
 D. Both biomass and substrate concentration will decrease

74. Vaccination protects us from infectious disease by generating memory  
 A. antigen.                      B. lymphocytes.                      C. macrophages.                      D. PMNs.
75. Widal test is a serological test to detect  
 A. Specific agglutinins against O-Ag of *Samonella typhi*  
 B. Specific precipitins against H-Ag of *Samonella typhi*  
 C. Specific agglutinins against both O-Ag and H-Ag of *Samonella typhi*  
 D. Specific precipitins against both O-Ag and H-Ag of *Samonella typhi*
76. The first recombinant vaccine to hit the market was  
 A. Influenza                      B. Hepatitis B                      C. Polio                      D. Cholera
77. Prokaryotes that have cell walls without peptidoglycan fall in the division  
 A. Gracilicutes                      B. Firmicutes                      C. Tenericutes                      D. Mendosicutes
78. Trickling filters fall in which kind of sewage treatment system  
 A. Primary                      B. Secondary                      C. Tertiary                      D. Quaternary
79. LTLT pasteurization is done at  
 A. 71.6 C / 15 sec                      B. 71.6 C / 30 min                      C. 62.9 C / 15 sec                      D. 62.9 C / 30 min
80. Vodka is made by the fermentation of  
 A. Barley                      B. Molasses                      C. Potatoes                      D. Fruit Juice
81. Riboflavin is produced in industry by  
 A. *Ashbya gossypii*                      B. *Propianobacterium shermanii*  
 C. *Zymomonas mobilis*                      D. *Lactobacillus plantarum*
82. *trp* operon is regulated by  
 A. catabolite repression                      B. allosteric feed back inhibition  
 C. attenuation                      D. End product inhibition
83. Which of the following is a phagemid  
 A. pUC8                      B. pUC18                      C. pUC118                      D. pSC101
84. Upon infection of *E. coli* with lambda phage, cI repressor is produced during  
 A. immediate early transcription                      B. delayed early transcription  
 C. late transcription                      D. DNA synthesis phase
85. TaqI is a restriction enzyme belonging to the Type  
 A. I                      B. II                      C. III                      D. IV
86. Thermophilic bacteria have more of the following in their cell membrane  
 A. unsaturated fatty acids                      B. saturated fatty acids  
 C. sterols                      D. glycerides
87. A polypeptide of 38.5 kDa will be coded by an ORF of the size  
 A. 0.21 kb                      B. 2.1 kb                      C. 1.05 kb                      D. 1.5 kb
88. pUC19 contains the origin of replication taken from  
 A. pMB1                      B. pSC101                      C. R1                      D. P15A
89. HaeIII, a restriction endonuclease recognizing tetrameric sequence GGCC, will cut a genomic DNA, which has 50% GC content, after every  
 A. 4<sup>2</sup> bp                      B. 4<sup>4</sup> bp                      C. 4<sup>6</sup> bp                      D. 4<sup>8</sup> bp
90. Which of the following nucleic acid amplification techniques can be used for quantification  
 A. TaqMan PCR                      B. Nested PCR  
 C. Reverse Transcription – PCR                      D. multiplex PCR
91. Bacterial artificial chromosome can accommodate foreign DNA fragments of the size  
 A. 1-10 kb                      B. 30-300 kb                      C. 250-500 kb                      D. 10-100 Mb

92. Which of the following mutagen causes oxidative deamination of cytosine  
A.  $\text{HNO}_2$  B.  $\text{HONH}_2$   
C. Methyl Nitro NitrosoGuanidine D. Ethyl Methane Sulphonate
93. Which of the following bacteria has unsaturated branched fatty alcohols in cell membrane  
A. *Thiobacillus* B. *Mycobacterium*  
C. *Pyrococcus* D. *Thermus*
94. For error prone PCR, the polymerase used is  
A. Taq B. Pfu C. Vent D. Sequenase
95. A bacterial cell starts growing logarithmically with generation time =20 min and reaches  $10^7$  population in 8 h. If 8 cells start growing similarly, in how much time will they reach the same population?  
A. 5 h B. 6 h C. 7 h D. 8 h
96. The coagulase test is used to differentiate  
A. *Staphylococcus epidermidis* from *Neisseria meningitidis*  
B. *Staphylococcus aureus* from *Staphylococcus epidermidis*  
C. *Streptococcus pyogenes* from *Staphylococcus aureus*  
D. *Streptococcus pyogenes* from *Enterococcus faecalis*
97. Which of the following extracellular enzymes produced by Group A streptococci is called "spreading factor," an enzyme important in skin and soft tissue infection?  
A. Streptokinase  
B. Hyaluronidase  
C. M Protein  
D. Deoxyribonuclease C
98. Serologic conversion to a positive test for HIV infection occurs:  
A. In 2-3 days  
B. In 3-4 weeks  
C. In 3-6 months  
D. May take up to 10 years
99. The species of bacteria, which possesses 250 genes for lipid biosynthesis is  
A. *M. genitalium*  
B. *M. tuberculosis*  
C. *E. coli*  
D. *H. influenza*
100. Why the bacterium *Treponema pallidum* is difficult to culture?  
A. Because it requires a great deal of water to reproduce  
B. Because it is unable to use carbohydrates as an energy source  
C. Because it lacks the genes needed for TCA cycle and oxidative phosphorylation  
D. Because it requires extremely low temperature at which water freezes



**Answer- Key**

**Code: 21**

**(Microbiologist)**

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