1. Which of the following is true?

1) Expert rules are designed to be used only by experts.  
   - 2.4 %
2) EU CAST is a social website for sport fishing enthusiasts.  
   - 3.7 %
3) EUCAST is an acronym for European Centre for Avalanche Survival Techniques  
   - 8.5 %
4) CLSI is pronounced as “SLEAZY” in the USA.  
   - 78 %
5) Antimicrobial susceptibility testing was invented to give microbiologists something to do.  
6) Antimicrobial breakpoints are important.
2. Which susceptibility guidelines do you use?

1) CLSI 74.7%
2) BSAC 6.3%
3) DIN 2.1%
4) SFM 5.3%
5) SRGA 4.2%
6) Other 7.4%
3. What is your main method of susceptibility testing?

1) Disk diffusion  42.6 %
2) Automated system  38 %
3) MIC  15.7 %
4) Breakpoint  2.8 %
5) Other  0.9 %
4. Which of the following is true about staphyloccocal susceptibility testing?

1) Cefoxitin zone diameters are much easier to read and interpret than oxacillin zone diameters for coagulase-negative staphylococci

65.4%

2) The clindamycin induction test is only necessary if the erythromycin MIC or disk result is intermediate and clindamycin result is susceptible

17.9%

3) Susceptibility tests for mupirocin for S. aureus must be tested in the presence of 50 mM Ca++ to be accurate

9%

4) The “wild type” distribution was named in honor of Derek Brown, Gunnar Kahlmeter, and Rafael Canton (the original “wild and crazy

7.7%
5. Where should you measure a linezolid disk diffusion zone?

1) From the outer edge of the zone of inhibition  
   15.7%

2) At approximately 80% inhibition of growth  
   35%

3) From the inner edge of growth observed with reflected light  
   17.1%

4) From the inner edge of growth observed with transmitted light  
   10.7%

5) The linezolid disk diffusion test doesn’t work and should not be used  
   21.4%
6. Which statement is true about vancomycin testing of S. aureus?

1) Iso-Sensitest agar is the most sensitive medium for detecting hetero-strains

2) Disk diffusion will identify vanA-containing VRSA strains but not VISA

3) MIC results should be interpreted after 16-18 hours of incubation at

4) The macro- Etest can identify hetero-VISA strains as long as both oxacillin and daptomycin are tested

5) Most automated susceptibility testing methods accurately detect

6) None of the above are true
7. Which statement is NOT true of daptomycin susceptibility testing?

1) Daptomycin resistance cannot be detected by disk diffusion
   15.4 %

2) Daptomycin MIC testing requires additional calcium in the medium
   18.8 %

3) Daptomycin tests should be incubated for a full 24 hours before interpretation
   10.3 %

4) Reduced susceptibility to daptomycin may accompany reduced susceptibility to vancomycin
   18.8 %

5) All the above are true
   36.8 %
8. An isolate identified as Enterococcus sp. was tested “susceptible” to ampicillin (MIC = 1 mg/L)

1) You can infer susceptibility to piperacillin and imipenem  
   
2) You can infer susceptibility to piperacillin and imipenem if the enterococcus is identified as E. faecalis  
   
3) You can infer resistance to piperacillin and imipenem  
   
4) Impossible to infer the result for imipenem since you cannot exclude the possibility of carbapenemases with specific activity against imipenem  

9. An *E. faecalis* isolate was found resistant to high levels of kanamycin (MIC >1000 mg/L) and to low levels of gentamicin (MIC= 8 mg/L)

1) Synergism between penicillins and gentamicin is abolished
   5.9 %

2) Synergism between penicillins and all aminoglycosides (except streptomycin) is abolished
   13.9 %

3) Synergism between penicillins and kanamycin is abolished and synergism between penicillins and gentamicin or amikacin is
   42.6 %

4) Synergism between penicillins and gentamicin is maintained and synergism between penicillins and amikacin is abolished
   37.6 %
10. An E. faecium isolate was found susceptible to vancomycin but resistant to teicoplanin

1) Impossible phenotype: check identification and susceptibility  
   32.8 %

2) Edit vancomycin as “resistant”  
   17.2 %

3) Edit teicoplanin as “susceptible”  
   2.3 %

4) Report as it is (VanN type of resistance with dissociated resistance between glycopeptides)  
   47.7 %
11. A S. pneumoniae isolate was recovered from a cerebro-spinal fluid. MIC of ampicillin was equal to 0.5 mg/L (susceptible)

1) You can deduce that MIC of cefotaxime or ceftriaxone will be equal to 0.25 or 0.5 mg/L
   7.6 %

2) You cannot deduce the MIC of cefotaxime or ceftriaxone but you can report cefotaxime as “susceptible”
   26.7 %

3) You have to determine MIC of cefotaxime (or ceftriaxone)
   48.9 %

4) Test for penicillinase production. If positive, this isolate should be reported as “resistant” to penicillins and susceptible to cefotaxime or
   13 %

5) Check identification and susceptibility
   3.8 %
12. You have a call from a veterinarian colleague: a streptococcus has been isolated from a cow (mastitis). Only one macrolide has been tested, erythromycin, and reported as active (susceptible). Is it possible to infer from this report susceptibility to tylosin or spiramycin (used in veterinarian practice)?

1) This result cannot be inferred without testing these macrolides

   13.4 %

2) Report as resistant

   0 %

3) Report as susceptible

   24.4 %

4) You need to perform a D-test: if positive, report as resistant to all macrolides, if negative, report as susceptible to tylosin and spiramycin.

   32.3 %

5) You have never seen a cow and you cannot answer this question,

   29.9 %
13. E. coli is identified in a blood culture from a patient who received ceftazidime for pyelonephritis. Cefotaxime MIC is 64 mg/L, ceftazidime is 0.25 mg/L (EUCAST S-breakpoint ≤1 mg/L for both cefotaxime and ceftazidime). ESBL-test is positive. How do you report cefotaxime and ceftazidime?

1) Cefotaxime R, ceftazidime S
   - 0.9%

2) Cefotaxime R, ceftazidime S with a warning that the isolate is ESBL-producing
   - 11.6%

3) Cefotaxime R, ceftazidime I
   - 6.3%

4) Cefotaxime R, ceftazidime R
   - 81.3%
14. E. coli is identified in a blood culture from a patient who received piperacillin-tazobactam for a post-operative abdominal infection. Piperacillin-tazobactam MIC is 8 mg/L (EUCAST S-breakpoint ≤ 8 mg/L). How do you report piperacillin-tazobactam?

1) Piperacillin-tazobactam S  
   44.7 %

2) Piperacillin-tazobactam S with a warning that the isolate is ESBL-producing  
   28.9 %

3) Piperacillin-tazobactam I  
   11.4 %

4) Piperacillin-tazobactam R  
   14.9 %
15. *K. pneumoniae* is identified in a urinary culture. Isolate is resistant to all beta-lactams except imipenem (MIC 2 mg/L) and meropenem (MIC 4 mg/L). EUCAST S-breakpoint for both carbapenems is ≤2 mg/L. ESBL-test is negative, positive synergy test between cefotaxime/ceftazidime and boronic acid. Which mechanism(s) of resistance is the most probable?

1) Production of KPC beta-lactamase 20.7%

2) Production of metallo-beta-lactamase 12.9%

3) Production of classical ESBL in combination with porin loss 5.2%

4) Production of AmpC in combination with porin loss 23.3%

5) 1 or 4 27.6%

6) 2 or 3 10.3%
16. *K. pneumoniae* is identified in a urinary culture. Isolate is resistant to all beta-lactams except imipenem (MIC 4 mg/L) and meropenem (MIC 2 mg/L). EUCAST S-breakpoint for both carbapenems is ≤2 mg/L. EDTA synergy test is positive. How do you report imipenem and meropenem?

1) Imipenem S, meropenem I  
   [Bar graph] 10.2%

2) Imipenem R, meropenem R  
   [Bar graph] 57.8%

3) Imipenem I, meropenem I  
   [Bar graph] 10.2%

4) Imipenem R, meropenem I  
   [Bar graph] 21.9%
17. E. cloacae is identified in a blood culture from a patient who is receiving cefotaxime for a nosocomial infection. MICs to cefotaxime and ceftazidime are both 0.5 mg/L. How do you report cefotaxime and ceftazidime?

1) Cefotaxime S, ceftazidime S
   - 10.8 %

2) Cefotaxime R, ceftazidime R
   - 19.8 %

3) Cefotaxime I, ceftazidime I
   - 6.3 %

4) Cefotaxime S, ceftazidime S with a warning about risk of selection of resistance unless combination with aminoglycoside is given
   - 40.5 %

5) Cefotaxime S, ceftazidime S with a warning about risk of selection of resistance unless combination with quinolone is given
   - 22.5 %
18. Why M. morganii, P. mirabilis, P. vulgaris, P. penneri and P. aeruginosa should be considered resistant to tetracyclines, including tigecycline?

1) The antibiotic cannot be transported through the peptidoglycan of these bacteria
   11.1 %

2) All these bacteria have an enzymatic drug-inactivation mechanism
   17.5 %

3) These compounds are pumped out by naturally-occurring chromosomal efflux pumps
   66.7 %

4) These bacteria appear as susceptible when tested in the presence of Ca2+
   2.4 %

5) Tetracyclines and tigecycline are only active against Gram-positive bacteria
   2.4 %
19. If a new rule is created .... which one would you prefer?

1) If R to nalidixic acid but S to ciprofloxacin, report as found but with a warning that the isolate probably has a one step quinolone-resistance mutation and may develop fluoroquinolone R during treatment”  74.2 %

2) If R to nalidixic acid but S to ciprofloxacin report as R to all fluoroquino-lone as may develop fluoroquinolone R during treatment  25.8 %
20. If a rule like this one is proposed... “If decreased susceptibility to nalidixic acid and/or ciprofloxacin is observed, report as found but with a warning that the isolate may develop fluoroquinolone R during treatment” will you support it?

1) Yes 61.2%
2) No 9.5%
3) I do not have criteria 6%
4) It will depend on the infection site 23.3%
21. A Serratia marcescens isolate is recovered from a blood culture from a patient admitted in an ICU. When applying the EUCAST breakpoints, this isolate is susceptible (<2 mg/L) to gentamicin and amikacin but intermediate (4 mg/L) to tobramycin. Then…

1) I will report this isolate as it is

2) I will modify tobramycin and report as R

3) I will modify both tobramycin and amikacin and report them as R

4) I will report gentamicin, tobramycin and amikacin as R