CHAPTER ONE: INTRO - EVALUATION OF EVIDENCE

1. Regarding the four-level hierarchy for classifying the strength of causal influences from available evidence, Level 1 states that evidence is:
   A sufficient  B suggestive but not sufficient  C inadequate  D not sufficient at all

2. Mode of ——— refers to the process by which an agent causes disease.
   A transference  B mobility  C action  D movement

3. Of the 9 areas in Austin Branford Hill’s criteria, number 7 is:
   A plausibility  B consistency  C biological gradient  D coherence

CHAPTER TWO: THE CHANGING CIGARETTE

4. Before ———, only 0.6 percent of cigarettes were filtered.

5. Cigarette smoke contains more than ——— chemicals, including at least 69 carcinogens.
   A 7,000  B 700  C 500  D 300

6. The ——— provides that premarket review of certain tobacco products by FDA is required before the products may be marketed.
   A Tobacco Control Act  B Stamp Tobacco Act  C Nicotine Act  D Smoking Advertisement Act

CHAPTER THREE: CHEMISTRY AND TOXICOLOGY

7. Mainstream smoke (from the butt end) contains considerably more cyanide than sidestream smoke (from the opposite end) does.
   A True  B False

8. The tobacco leaf contains many alkaloid chemicals; ——— is the most abundant.
   A piperidine  B isoxazole  C nicotine  D tropane

9. (———)-nitrosamines are a class of chemical compounds containing a nitroso group attached to an amino nitrogen.
   A O  B N  C X  D R

10. ———s are chemical compounds with two or more condensed aromatic and other cyclic rings of carbon and hydrogen atoms.
    A JKE  B VTR  C PAH  D WSA

11. ——— amines (HCAs) are a class of chemical compounds that contain at least one cyclic ring and an amine-substituted ring.
    A Heterogeneous  B Helical  C Heterocyclic  D Hyperactive

12. In addition to lamina, cigarette filler often contains puffed or expanded tobacco, tobacco stems, humectants, and various flavor additives.
    A True  B False

13. Cigarette smoking is a risk factor for bladder cancer. The increased mutagenicity of smokers’ urine was first shown in:

14. In human studies, smoking was shown to increase the frequency of HRRT mutants in peripheral blood lymphocytes by approximately:
    A 30%  B 18%  C 50%  D 3%

15. Study findings indicate that cytotoxicity may play a role in several tobacco-related chronic diseases, including emphysema.
    A True  B False
16. In one study, researchers observed nonneoplastic tumors throughout the ——— of animals exposed to smoke.
A  liver  B  respiratory tract  C  skeletal system  D  brain

17. Researchers demonstrated fetotoxicity from cigarette smoke exposure by reporting ——— in rats and mice exposed during gestation.
A  increased nausea  B  reduced fetal weight  C  increased fetal weight  D  increased mortality

18. It has been shown that direct nicotine administration to humans or animals ——— body weight and caloric intake.
A  slightly increases  B  sharply increases  C  decreases  D  has no effect on

CHAPTER FOUR: NICOTINE ADDICTION

19. The pharmacologic and behavioral processes that determine tobacco addiction are similar to those found in heroin and cocaine.
A  True  B  False

20. Researchers have used the ——— Test for Nicotine Dependence (FTND) to determine the degree of dependence in smokers.
A  Fairview  B  Fenabi  C  Ferrovie  D  Fagerström

21. Tobacco products contain more than ——— chemicals, some of which could contribute to dependence.
A  4,000  B  400  C  40  D  4

22. Oral use of smokeless tobacco products results in high venous concentrations of nicotine ——— to those for use of cigarettes.
A  equal  B  slightly less  C  much less  D  greater

23. In behavioral psychology, a stimulus is considered ——— if it increases a response or behavior resulting in obtaining that stimulus.
A  destructive  B  weakening  C  unique  D  reinforcing

24. ———, regions of the chromosomes necessary for cell division, shorten each time cells divide.
A  Positive reinforcement  B  Negative reinforcement  C  Stable reinforcement  D  Cyclic reinforcement

25. Smoking cessation leads to an aversive withdrawal syndrome lasting ——— weeks after cessation.
A  0.5  B  one to four  C  eight to ten  D  fifteen to thirty three

26. Most estimates suggest that incidence of major depressive disorder among smokers is approximately ——— that among nonsmokers.
A  2 to 3 times  B  5 times  C  7 times  D  equal to

27. More than ——— percent of patients with schizophrenia smoke compared with 20-30 percent of the general population
A  50-60  B  70  C  80-90  D  25-35

28. Varenicline was approved by FDA as a treatment for smoking cessation in:

29. There is strong evidence from studies of twins that smoking initiation and nicotine dependence are influenced by heritable factors.
A  True  B  False

30. One study found that the most susceptible youth lose autonomy over tobacco within ——— days of first inhaling from a cigarette.
A  14  B  one or two  C  30  D  45

31. The Yale Longitudinal High-Risk Study revealed ——— association of nicotine dependence with anxiety disorder, as well as others.
A  no  B  a significant  C  a very weak  D  a reverse

32. One US study found that for racial and ethnic groups, the lowest prevalence of smoking was among ——— (9.6 percent).
A  Asians  B  African Americans  C  Alaska natives  D  Latinos
33. It is estimated that ——— of all cigarettes sold in the US are consumed by people with mental illnesses or substance abuse disorders.
   A 5-7 percent  B 12 percent  C 28 percent  D nearly one half

34. Every year ——— of daily smokers in the US stop smoking for 24 hours, but only 5 percent or less achieve long-lasting abstinence.
   A 20 percent  B 32-35 percent  C about 45 percent  D 5 percent

35. One study found that roughly ——— percent of those who have ever smoked eventually become long-term former smokers.
   A 30  B 15  C 50  D 85

36. Regarding relapse to smoking, on average, a second lapse occurs within ——— of the first lapse.
   A 3 days  B 1 week  C 1 month  D 24 hours

CHAPTER FIVE: CANCER

37. The metabolic activation of carcinogens results in formation of ——— adducts, which are absolutely central to the carcinogenic process.
   A DNA  B enzyme  C cytochrome  D plastid

38. Researchers have used the ——— (NPRO) test to compare endogenous nitrosation in smokers and nonsmokers.
   A N-nitrosopropoline  B N-nitropresoline  C N-nitropiridioline  D N-nitropirelliosification

39. Ethylene oxide reacts directly with DNA to form ——— -(2-hydroxyethyl)guanine and other adducts.
   A 5  B 7  C 3  D 15

40. ———, encoded by CYP genes, are microsomal enzymes that catalyze the oxidation of many of the carcinogens in cigarette smoke.
   A S-563s  B R-553s  C P-450s  D D-280s

41. Researchers believe that aromatic amines in tobacco smoke contribute to smoking-related ——— cancer.
   A pancreatic  B colon  C bladder  D thyroid

42. Researchers have established cigarette smoking as a major cause of lung cancer: more than ——— of cases are attributable to smoking.
   A 50 percent  B 65 percent  C 73 percent  D 85 percent

43. The GSTM ——— enzyme is important in detoxifying carcinogens.
   A 1  B 2  C 3  D 4

44. Tobacco smoke is lacking in reactive oxygen species that can oxidize DNA bases.
   A True  B False

45. The ——— assay measures the expression level of damaged reporter genes, which are involved in reactivation of the host cell.
   A TLR  B HCR  C RRY  D OIC

46. The RAD23B gene is an evolutionary, well-conserved gene with ——— exons.
   A 8  B 4  C 25  D 10

47. The ——— is the kneecap and articulates with the distal femur.
   A patella  B tibia  C fibula  D tarsal bone

48. The most frequently inactivated tumor-suppressor gene in lung cancer is:
   A IU89  B TP53  C RR34  D BN21

49. ——— gene expression is common in lung cancer.
   A Slight decreased  B Increased  C Marked decreased  D An absence of
50. In oral cancers, it is shown that the TP53 mutation has ——— in the prevalence of mutations among heavy smokers versus nonsmokers.
A a 7 increase  B an almost 4 fold increase  C a 2 fold increase  D an 8 fold increase

51. Apoptosis was first described in 1972. The term “apoptosis” is from the Greek word for “———.”
A breaking down  B bringing together  C falling off  D building around the center

52. Activation of the RAS pathway sends a strong anti-apoptotic signal, and the constitutive activation of RAS can ——— normal cells.
A dissolve  B speed up the duplication of  C do no damage to  D transform

A increases  B slightly decreases  C markedly decreases  D has no effect on

54. COX-2 over-expression in lung cancer is associated with tumor angiogenesis and survival and proliferation of tumor cells.
A True  B False

55. More than ——— genes are inactivated by gene promoter hypermethylation in lung cancer.
A 12  B 22  C 42  D 50

56. A hallmark of the ——— cell is the ability to disrupt the tightly regulated cell-cycle control and enable the cell to bypass checkpoints.
A cardiac muscle  B pulmonary tissue  C neoplastic  D hepatic tissue

57. Smoking and exposure to asbestos interact synergistically to increase the risk for lung cancer.
A True  B False

CHAPTER SIX: CARDIOVASCULAR DISEASES

58. In a US CDC 2008 report, smoking accounted for 33 percent of all deaths from CVD in persons older than ——— years of age.
A 20  B 27  C 35  D 54

59. The risks of MI and death from CHD are ——— among former smokers than among continuing smokers in many studies.
A slightly higher  B lower  C much higher  D about equal

60. The ——— study is a case-control investigation of acute MI in 52 countries around the world, including North and South America.
A ALLHEART  B INTERHEART  C PERIHEART  D BIGHEART

61. In regular smokers, carboxyhemoglobin levels average about ——— percent, compared with 10 percent or higher in heavy smokers.
A 8  B 5  C 12  D 15

62. In one study, intravenous nicotine, nicotine nasal spray, and nicotine chewing gum all increased the heart rate up to ——— per minute.
A 2 beats  B 7 beats  C 10 to 15 beats  D 21 beats

63. Smoking impairs the ability of the endothelium to resist thrombosis.
A True  B False

64. Administration of vitamin ——— reverses the impairment of endothelium-mediated vasodilation in smokers.
A D  B K  C A  D C

65. Studies have reported that sudden cardiac death is ——— times higher in smokers than in nonsmokers.
A 2  B 1.5  C 2.5  D 3.5

66. Study findings indicate that circulating levels of ——— increase in smokers and decrease with smoking cessation.
A red cells  B white cells  C white cell antibodies  D fibrinogen
67. In one study, it was found that insulin sensitivity was significantly lower (by 10 to ——— percent) in smokers versus nonsmokers.

A 15  B 20  C 30  D 40

68. One study showed that the albumin excretion rate was ——— times higher in smokers than in nonsmokers, after statistical corrections.

A 2.8  B 2.1  C 1.5  D 1.3

69. Cigarette smoking is thought to raise the LDLC to HDLC ratio by ——— percent.

A 5  B 10 to 12  C 15 to 20  D 35

70. ——— standard markers of lipids may be altered in cigarette smokers.

A Only LDLc  B Only serum triglyceride levels  C Numerous  D Only HDLC

71. Smoking cessation after MI reduces the risk of cardiovascular morbidity and mortality by ——— percent.

A 17 to 19  B 36 to 50  C 22  D 5

72. Even with the most successful counseling interventions, at least 40 percent of smokers who have cardiac disease resume smoking within:

A 1 year  B 5 years  C 3 years  D 7 years

CHAPTER SEVEN: PULMONARY DISEASES

73. Natural respiratory defenses are critical because of the substantial volume of air inhaled daily: about ——— liters per day.

A 75  B 100  C 1,000  D 10,000

74. Emphysema was first described by ——— in 1834 on the basis of observations made on the cut surface of postmortem human lungs.

A René Laënnec  B Ronaldo Rosselini  C Brian Cartwright  D Giuseppe Vitorelli

75. The ——— cells covering the lung surface are a key in defending the lung against inhaled gases and particles.

A epithelial  B prokaryotic  C erythroid  D bristle

76. The epithelium that covers the follicles in lung tissue contains ——— cells that transport antigens from the lumen to the lamina propria.

A specialized Q  B specialized L  C specialized M  D specialized R

77. Free radicals are molecules with at least ——— unpaired electron(s).

A four  B three  C two  D one

78. Catalase is a tetrameric ——— that undergoes oxidation and reduction at its active site in the presence of H2O2.

A eosinophil  B hemoprotein  C platelet  D carbohydrate

79. ——— trapping, a technique in which a radical reacts with a more stable molecule, can be used to measure oxidants in biologic systems.

A Spin  B Turn  C Flip  D Reverse

80. ———, the major thiol antioxidant in the lungs, rapidly decreases in the lung tissue of rats after exposure to cigarette smoke.

A TTR  B GSH  C RUI  D BEW

81. After just one cigarette has been smoked, nitrite, nitrate, and cysteine ——— in peripheral blood.

A become slightly elevated  B greatly increase  C decrease  D levels are maintained

82. In animal models, markers of oxidative stress generally increase during the first ——— hours after exposure to cigarette smoke.

A 2  B 4  C 6  D 17
83. ——— refers to cellular death, which is organized and noninflammatory.
A Necrosis  B Flat-lining  C Lytic adhesion  D Apoptosis

84. Inflammatory cells linked to the development of emphysema include neutrophils, macrophages, and lymphocytes.
A True  B False

85. The BAL (Bronchoalveolar ———) technique samples cells and mediators from the lower respiratory tract.
A Latency  B Lancaster  C Lavage  D Lipid

86. ——— terminal air spaces are the hallmark of emphysema
A Enlarged  B An increase of  C Miniscule  D A decrease of

87. ——— from exposure to tobacco smoke has a role in the pathogenetic process leading to chronic obstructive pulmonary disease.
A Mental stress  B Oxidative stress  C Muscular stress  D Neural stress

CHAPTER EIGHT: REPRODUCTIVE AND DEVELOPMENTAL EFFECTS

88. Tobacco smoke contains ——— compounds, some of which are known to have toxic effects on reproductive health.
A between 100 and 200  B almost 95  C nearly 800  D thousands of

89. The PCASRM has estimated that ——— percent of infertility may be attributable to smoking.
A 5  B 8  C 10  D 13

90. Epidemiologic studies have consistently reported a(n) ——— risk of placenta previa among smokers.
A increased  B mildly reduced  C unaffected  D greatly reduced

A 8.4  B 12.3  C 3.2  D 1.2

92. The highest quality studies indicate birth weight decrements of 15 to ——— g from exposure to secondhand smoke.
A 35  B 50  C 100  D 245

93. Many studies have found a slightly increased risk of approximately ——— for stillbirth or neonatal mortality associated with smoking.
A 20 to 30 percent  B 8 to 10 percent  C 5 percent  D 44 percent

94. ——— studies show that smokers have lower circulating levels of estriol and estradiol than do nonsmokers.
A Very few  B No  C Several  D Only Asian-based

95. The ——— is an in vivo target of cigarette smoke and its components.
A pancreas  B urinary bladder  C oviduct  D distal small bowel

96. The fetus of a smoker develops under conditions of ——— partial pressure of O2.
A slightly increased  B greatly increased  C an unaffected  D reduced

97. Smoking acutely increases the heart rate and blood pressure of smokers, particularly after ——— smoking.
A a period of abstinence from  B a long period of  C completely quitting  D changing cigarette brands in

98. A study of more than 5,000 participants found that smokers tended to have a lower mean diastolic blood pressure of ——— of mercury.
A 8 to 10 millimeters  B 1 to 3 millimeters  C 5 to 7 millimeters  D 8 to 9 millimeters

99. A large study, with 67 pregnant smokers, found a significant increase of ——— in maternal heart rate immediately after smoking.
A 3 percent  B only 1 percent  C 6 percent  D 4 to 5 percent
100. Regarding most studies for maternal blood pressure, increases of less than ——— percent were observed.
A 12  B 15  C 9  D 5

101. A reactive NST (——— nonstress test) is a sign of fetal well-being.
A nominal  B nosocomial  C neural  D noninvasive

102. The embryo is most easily disturbed during the organogenesis period, from day 15 to day ——— after conception.
A 20  B 35  C 45  D 60

103. Epidemiologic studies show that offspring of maternal smokers have abnormal lung function.
A True  B False

104. ———, smoking appears to have immunosuppressive effects.
A In 100 percent of cases  B In general  C In no studies  D In very few studies

105. ——— is formed as a by-product of combustion and is thus present in tobacco smoke.
A CO2  B H  C CO  D H2O2

106. The dose of the toxin, CO, per cigarette is ——— times the dose of nicotine.
A 5  B 12  C 10 to 20  D 3

107. The binding of CO to hemoglobin is tenacious, with a half-life of ——— hours.
A five to six  B around two  C four  D over eleven

108. ———, the principal alkaloid in tobacco, is a major contributor to the addictive properties of smoking.
A Irritant bases  B Nicotine  C CO  D Tar

109. Regarding tobacco smoke studies, arsenic was detectable but not quantifiable (limit of quantitation = ——— ng per cigarette).
A 1.2  B 2.7  C 5.4  D 12.8

110. ——— metals can influence electron-exchange reactions and oxidative stress within cells.
A Interim  B Terminal  C Transition  D Alkaloid

111. Researchers have investigated ——— as the agent in cigarette smoke responsible for LBW in newborns of smokers.
A cadmium  B technetium  C promethium  D astatine

112. The most commonly observed effects of PAHs in animal studies are growth retardation and:
A anemia  B chronic elevated BP  C physical malformations  D fetal mortality

113. Cigarette smoke inhibits the growth of the chick chorioallantoic ——— (CAM).
A membrane  B mitosis  C melamine  D menthanol

114. ——— of women who smoke during the first pregnancy also smoke during the second.
A One-half  B Two-thirds  C One-fifth  D One-fourth

115. The ——— Health Organization (WHO) has called tobacco use “the single most preventable cause of death in the world today”.
A Washington  B Willoughby  C World  D Warren

116. Smokers who quit after the age of ——— years continue to have excess risk for tobacco-related diseases.
A 25  B 32  C 37  D 44
117. If the population ceased smoking, this single behavior change would be tantamount to a vaccine against ——— of cancer deaths.
A  one-eighth    B  one-fifth    C  one-fourth    D  one-third

118. Data indicate that less than ——— percent of smokers are offered assistance in quitting annually.
A  45    B  55    C  30    D  62

119. The federal excise tax on cigarettes rose from $0.24 to ——— on April 1, 2009.
A  $1.01    B  $0.52    C  $0.49    D  $0.88

120. Both active and involuntary smoking are the cause of at least ——— types of cancer.
A  15    B  7    C  4    D  12
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