NUMS ORIGINAL PAST PAPERS

ARMY MEDICAL COLLEGE PAST PAPERS

(This Past Papers can be used for FMDC,ETEA,UHS & LUMHS Preparation ALSO)

(Combined) 2014, 2015,2017 & 2018 with Solutions/Answers

(Total Marks = 250)

Biology = 100

Physics = 120 +

Chemistry = 120 +

English = 60+

*ANSWERS TO EACH OF M;CQs IS AT THE BOTTOM OF THE PAGE

BIOLOGY:-

1. Haemodialysis means cleaning of
(A) urine
(B) blood
(C) glomerular filterate
(D) coelomic fluid

2. Production of sweat and sebum is related with
(A) skin
(B) liver
(C) lungs
(D) GIT

3. The evaporative cooling in the respiratory tract of dogs is called
(A) vasodilation
(B) vasoconstriction
(C) panting
(D) all of these

4. Which of the following pathogen type cause disease that can be treated with antibiotics?
(A) bacteria
(B) fungi
(C) virus
(D) none of these

5. Most cell membranes are composed principally of
(A) DNA ad protein
(B) protein and lipids

(C) protein and chitin
(D) protein and RNA

6. Normally, in the process of osmosis, the net flow of water molecules into or out of the cell depends upon differences in the
(A) concentration of water molecules inside and outside the cell
(B) concentration of enzymes on either side of the cell membrane
(C) rate of molecular motion on either side of the cell membrane
(D) none of these

7. Sodium ions are “pumped” from a region of lower concentration to a region of higher concentration in the nerve cells of humans. This process is an example of

(A) diffusion
(B) passive transport
(C) osmosis
(D) active transport

8. Proteins are made from amino acids by the process of
(A) hydrolysis
(B) pinocytosis
(C) dehydration synthesis
(D) active transport

9. Which is an organic compound found in most cells?
(A) water
(B) glucose
(C) oxygen
(D) sodium chloride

10. Which are the four most abundant elements in living cells?
(A) carbon, oxygen, nitrogen, sulfur
(B) carbon, oxygen, hydrogen, nitrogen
(C) carbon, oxygen, sulfur, phosphorus
(D) carbon, sulfur, hydrogen, magnesium

ANSWERS: BIOLOGY MCQS

1. B
2. A
3. C
4. A
5. B
6. A
7. D
8. C
9. B
10. B

.....

11. Starch is converted into maltose by
(A) diastase
(B) invertase
(C) maltase
(D) amylase

12. Co-enzyme is often formed from
(A) lipid
(B) protein
(C) inorganic ion
(D) vitamin

13. Messenger RNA is formed in
(A) nucleus
(B) chloroplast
(C) mitochondria
(D) none of these

14. Number of chromosomes in E.coli
(A) 4
(B) 6
(C) 3
(D) 1

15. Protein factory is
(A) nucleus
(B) ribosome
(C) golgi complex
(D) centriole

16. Smallest disease causing agents in plants are
(A) virion
(B) mycoplasma
(C) viroids
(D) prions

17. The major cell infected by the HIV is lymphocyte
(A) helper-T
(B) B
(C) both T and B
(D) none of these

18. Pigment present in red algae is
(A) fucoxanthin
(B) phycocyanin
(C) phycoerythrin
(D) bilirubin

19. Nutrition in fungi is
(A) photosynthetic
(B) chemosynthetic
(C) completely parasitic
(D) absorptive heterotrophs

20. Fungi resemble plants because they lack

(A) cell wall

(B) cytoplasm

(C) centriole

(D) nucleus

ANSWERS: BIOLOGY QUIZ

11. A

12. B

13. A

14. D

15. B

16. C

17. A

18. C

19. D

20. C

.....

21. Which is a parasitic plant
(A) cuscuta
(B) rose
(C) ferns
(D) mosses

22. True roots absent in
(A) ferns
(B) bryophytes
(C) gymnosperms
(D) angiosperms

23. The mechanism for ATP synthesis is
(A) chemosynthesis
(B) photosynthesis
(C) phosphorylation
(D) chemiosmosis

24. Enzyme present in the saliva is
(A) lipase

(B) trypsin
(C) ptyalin
(D) invertase

25. Nitrogen is present in
(A) carbohydrates
(B) proteins
(C) lipids
(D) carbonates

26. The food is ground in the cockroach in
(A) mesenteron
(B) crop
(C) gizzard
(D) intestine

27. Operculum is present in
(A) bony fish
(B) sea fish

(C) cartilaginous fish
(D) none of these

28. In which animal respiratory surface are found in more than one organ
(A) birds
(B) human
(C) fish
(D) frog

29. The heart is enclosed in a membrane called
(A) pleura
(B) pericardium
(C) peritoneum
(D) epithelium

30. From right ventricle blood is pushed into
(A) pulmonary trunk

(B) brain
(C) aorta
(D) body

ANSWERS: BIOLOGY QUIZZES

21. A
22. B
23. D
24. C
25. B
26. C
27. A
28. D
29. B
30. A

……

31. Which one is abundant in lymph
(A) oxygen

(B) lipids
(C) water
(D) proteins

32. Jaws without teeth are found in found in
(A) birds
(B) reptiles
(C) fish
(D) none of these

33. Male reproductive part of flower is
(A) stigma
(B) stamen
(C) carpel
(D) ovule

34. Coordination in plants is by
(A) nervous system
(B) enzymes

(C) hormones
(D) roots

35. The simplest fatty acid is
(A) palmitic acid
(B) butyric acid
(C) oleic acid
(D) acetic acid

36. All enzymes are protein which are
(A) globular
(B) fibrous
(C) helical
(D) all of these

37. Cilia are produced from
(A) mitochondria
(B) cell-membrane
(C) centriole
(D) cytoplasm

38. Which of the following disease is not caused by virus
(A) T.B
(B) AIDS
(C) HIV
(D) flu

39. Which of the following is a filamentous alga
(A) ulva
(B) chlorella
(C) acetabularia
(D) spirogyra

40. Which of the following is not sac fungi
(A) truffles
(B) yeasts
(C) mushrooms
(D) morels

ANSWERS: BIOLOGY QUIZ

31. D
32. A
33. B
34. C
35. D
36. A
37. C
38. A
39. D
40. C

……

41. ‘Cassia fistula’ is the scientific name of

(A) amaltas
(B) rose

(C) onion
(D) tomato

42. Phage virus consists of head and
(A) thorax
(B) neck
(C) tail
(D) none of these

43. Bacteria without any flagella are called
(A) monotrichous
(B) atrichous
(C) peritrichous
(D) lophotrichous

44. Protists have been evolved from
(A) animals
(B) plants

(C) fungi
(D) prokaryotes

45. Algae differ from plants in that the sex organs in algae are
(A) multicellular
(B) unicellular
(C) acellular
(D) none of these

46. Fungi can absorb food from the substrate because the have
(A) sporangium
(B) spores
(C) rhizoids
(D) stalk

47. A seed may be defined as a fertilized
(A) egg
(B) ovary

(C) ovule
(D) embryo

48. Platyhelminthes means
(A) round worms
(B) flat worms
(C) tape worms
(D) pin worms

49. The first land vertebrates were
(A) dipnoi
(B) amphibia
(C) reptilia
(D) aves

50. All life on planet earth is powered by
(A) solar energy
(B) thermal energy
(C) tidal energy
(D) kinetic energy

ANSWERS: BIOLOGY QUIZZES

41. A
42. C
43. B
44. D
45. B
46. C
47. C
48. B
49. B
50. A

……

51. Recombinant DNA is introduced in to host cell by means of

(A) phage
(B) vector

(C) bacteria
(D) enzyme

52. In cystic fibrosis, the patient lacks a gene that codes for trans-membarene carrier of
(A) sodium ion
(B) carbon dioxide
(C) chloride ion
(D) potassium ion

53. Which gene is located on linkage group number 11 in man
(A) sickle cell anemia
(B) leukemia
(C) albinism
(D) all of these

54. In birds the sex is determined by the type of

(A) sperm
(B) autosomes
(C) egg
(D) none of these

55. In RNA nucleotides are attached by
(A) peptide bonds
(B) hydrogen bonds
(C) covalent bond
(D) phosphodiester bond

56. The chromosome is
(A) gene
(B) genes + protein
(C) DNA + genes
(D) gene + protein

57. The human body contains water
(A) 60-80%
(B) 70-90%

(C) 75-95%
(D) 80-90%

58. Environment is a source of
(A) food
(B) shelter
(C) clothing
(D) all of these

59. Fresh water ecosystem covers
(A) 2%
(B) 1%
(C) 3%
(D) 5%

60. Foul smell in lake is produced by
(A) algae
(B) bacteria
(C) fungi
(D) all of these

ANSWERS: BIOLOGY MCQS

51. B
52. C
53. D
54. C
55. D
56. B
57. B
58. D
59. B
60. D

.....

61. Starch is richly present in

(A) onion
(B) apple
(C) cereals
(D) tomato

62. Plants having foreign DNA are known as
(A) genetic plants
(B) recombinant plants
(C) cultured plants
(D) transgenic plants

63. Which of the following kinds of atom do not occur in carbohydrates
(A) carbon
(B) hydrogen
(C) nitrogen
(D) oxygen

64. The basic framework of all types of membranes are
(A) lipoproteins
(B) glycoproteins
(C) proteoglycans
(D) nucleoproteins

65. Single membrane bounded organelle is
(A) nucleus
(B) lysosome
(C) ribosome
(D) none of these

66. Irregular grape like cluster of bacilli is called
(A) diplo bacilli
(B) strepto bacilli
(C) staphylo bacilli
(D) none of these

67. It is generally accepted that plants arose from ancestral
(A) green algae
(B) fungi
(C) bacteria
(D) all of these

68. Main energy reserves in the case of green algae are
(A) glycogen
(B) sucrose
(C) glucose
(D) starch

69. The chief component of the cell wall of the majority of fungi is
(A) pectin
(B) chitin
(C) lignin
(D) cellulose

70. After pollination the pollens are transferred to which part of the flower
(A) ovary
(B) style
(C) stigma
(D) none of these

ANSWERS: BIOLOGY QUESTIONS

61. C
62. D
63. C
64. A
65. B
66. C
67. A
68. D
69. B
70. C

.....

71. Glyoxisomes contain enzymes for
(A) glyoxylate cycle
(B) glycolate cycle
(C) Calvin cycle
(D) none of these

72. Vacuoles serve to
(A) expand the plant cells
(B) sites for storage
(C) both in expansion and storage
(D) non-specific function

73. An isolated virus is not considered living since it
(A) separate into two parts
(B) cannot metabolize
(C) rapidly looses its genome
(D) all of these

74. The predominant phycobilin pigment in cyanobacteria which is of blue colour is
(A) phycoerythrin
(B) phycocyanin
(C) fucocyanin
(D) fucoxanthin

75. Deafness is caused by misuse of
(A) penicillin
(B) tetracycline
(C) paracetamol
(D) streptomycin

76. Cell envelope does not include
(A) capsule
(B) slime layer
(C) cell wall
(D) cell membrane

77. Coenocytes is a fungal body which is
(A) multi-nucleate aseptate
(B) multi-nucleate septate
(C) uni-nucleate septate
(D) uni-nucleate aseptate

78. Bryophytes are
(A) all heterosporous

(B) all homosporous
(C) mostly homosporus
(D) none of these

79. Nephridia are excretory organs in
(A) round worms
(B) lizard
(C) earth worm
(D) planaria

80. Which one is harmful mollusc
(A) slug
(B) snail
(C) oyester
(D) star fish

ANSWERS: MCQS OF BIOLOGY
71. A
72. C
73. B
74. B

75. D
76. D
77. A
78. B
79. C
80. A

81. Which structure is involve in gaseous exchange of plants
(A) stomata
(B) lenticels
(C) cuticle
(D) all of these

82. Common feature of human and insect trachea is
(A) non-collapsiable wall
(B) supporting rings
(C) ectodermal origin
(D) endodermal origin

83. Vomiting occurs due to
(A) constipation
(B) diarrhoea
(C) antiperistalsis
(D) peristalsis

84. Photosynthetic prokaryotes lack
(A) ribosomes
(B) chloroplast
(C) cell-membrane
(D) vacuole

85. Which of the following organ is because of absence of teeth in birds
(A) crop
(B) syrinx
(C) stomach
(D) gizzard

86. The scientific name of jelly fish is
(A) Aurelia

(B) Madrepore
(C) Actinia
(D) Obelia

87. In which plants leaves are always in whorls
(A) lycopsids
(B) psilopsids
(C) sphenopsids
(D) pteropsids

88. In bacterial and viral infection, their is increase in number of
(A) platelets
(B) RBC’s
(C) antibodies
(D) WBC’s

89. In plants, which are involved in testa formation
(A) tracheids

(B) sclereids
(C) sclerenchyma
(D) none of these

90. The etiolated plants lack
(A) chlorophyll
(B) xanthophyll
(C) caroteins
(D) none of these

ANSWERS: BASIC BIOLOGY QUIZ
81. D
82. A
83. C
84. B
85. D
86. A
87. C
88. D
89. B
90. A

.....

91. Highly intelligent mammals are
(A) rat
(B) bat
(C) dolphin
(D) elephant

92. Plants absorb most part of water needed by them through their
(A) stem
(B) root hairs
(C) leaf
(D) bark

93. One of the following is not a function of bones
(A) support
(B) production of blood cells
(C) protein synthesis
(D) muscle attachment

94. Movement of cell against concentration gradient is called
(A) active transport
(B) osmosis
(C) diffusion
(D) both b and c

95. Pollination is best defined as
(A) germination of pollen grains
(B) transfer of pollen from anther to stigma
(C) formation of pollen grains
(D) none of these

96. DNA structure was first described by
(A) Pasteur
(B) Robert Koch
(C) Watson and Crick
(D) Carlous Linnaues

97. The most abundant element in the Earth’s atmosphere is
(A) Oxygen
(B) Nitrogen
(C) Hydrogen
(D) Carbondioxide
(E) None of these

ANSWERS: BIOLOGY MULTIPLE CHOICE QUESTIONS
91. C
92. B
93. C
94. A
95. B
96. C
97. B

E N D

ENGLISH :-

Amazing — incredible, unbelievable, improbable, fabulous, wonderful, fantastic, astonishing, astounding, extraordinary
Anger — enrage, infuriate, arouse, nettle, exasperate, inflame, madden
Angry — mad, furious, enraged, excited, wrathful, indignant, exasperated, aroused, inflamed

Answer — reply, respond, retort, acknowledge

Ask– — question, inquire of, seek information from, put a question to, demand, request, expect, inquire, query, interrogate, examine, quiz
Awful — dreadful, terrible, abominable, bad, poor, unpleasant
Bad — evil, immoral, wicked, corrupt, sinful, depraved, rotten, contaminated, spoiled, tainted, harmful, injurious, unfavorable, defective, inferior, imperfect, substandard, faulty, improper, inappropriate, unsuitable, disagreeable, unpleasant, cross, nasty, unfriendly, irascible, horrible, atrocious, outrageous, scandalous, infamous, wrong, noxious, sinister, putrid, snide, deplorable, dismal, gross, heinous, nefarious, base, obnoxious, detestable, despicable,

contemptible, foul, rank, ghastly, execrable
Beautiful — pretty, lovely, handsome, attractive, gorgeous, dazzling, splendid, magnificent, comely, fair, ravishing, graceful, elegant, fine, exquisite, aesthetic, pleasing, shapely, delicate, stunning, glorious, heavenly, resplendent, radiant, glowing, blooming, sparkling
Begin — start, open, launch, initiate, commence, inaugurate, originate
Big — enormous, huge, immense, gigantic, vast, colossal, gargantuan, large, sizable, grand, great, tall, substantial, mammoth, astronomical, ample, broad, expansive, spacious, stout, tremendous, titanic, mountainous

Brave — courageous, fearless, dauntless, intrepid, plucky, daring, heroic, valorous, audacious, bold, gallant, valiant, doughty, mettlesome
Break — fracture, rupture, shatter, smash, wreck, crash, demolish, atomize
Bright — shining, shiny, gleaming, brilliant, sparkling, shimmering, radiant, vivid, colorful, lustrous, luminous, incandescent, intelligent, knowing, quick-witted, smart, intellectual
Calm — quiet, peaceful, still, tranquil, mild, serene, smooth, composed, collected, unruffled, level-headed, unexcited, detached, aloof
Come — approach, advance, near, arrive, reach

Cool — chilly, cold, frosty, wintry, icy, frigid
Crooked — bent, twisted, curved, hooked, zigzag
Cry — shout, yell, yowl, scream, roar, bellow, weep, wail, sob, bawl
Cut — gash, slash, prick, nick, sever, slice, carve, cleave, slit, chop, crop, lop, reduce
Dangerous — perilous, hazardous, risky, uncertain, unsafe
Dark — shadowy, unlit, murky, gloomy, dim, dusky, shaded, sunless, black, dismal, sad
Decide — determine, settle, choose, resolve
Definite — certain, sure, positive, determined, clear, distinct, obvious
Delicious — savory, delectable, appetizing, luscious, scrumptious,

palatable, delightful, enjoyable, toothsome, exquisite
Describe — portray, characterize, picture, narrate, relate, recount, represent, report, record
Destroy — ruin, demolish, raze, waste, kill, slay, end, extinguish
Difference — disagreement, inequity, contrast, dissimilarity, incompatibility
Do — execute, enact, carry out, finish, conclude, effect, accomplish, achieve, attain
Dull — boring, tiring„ tiresome, uninteresting, slow, dumb, stupid, unimaginative, lifeless, dead, insensible, tedious, wearisome, listless, expressionless, plain, monotonous, humdrum, dreary
Eager — keen, fervent, enthusiastic, involved, interested, alive to

End — stop, finish, terminate, conclude, close, halt, cessation, discontinuance
Enjoy — appreciate, delight in, be pleased, indulge in, luxuriate in, bask in, relish, devour, savor, like
Explain — elaborate, clarify, define, interpret, justify, account for
Fair — just, impartial, unbiased, objective, unprejudiced, honest
Fall — drop, descend, plunge, topple, tumble
False — fake, fraudulent, counterfeit, spurious, untrue, unfounded, erroneous, deceptive, groundless, fallacious
Famous — well-known, renowned, celebrated, famed, eminent, illustrious, distinguished, noted, notorious

Fast — quick, rapid, speedy, fleet, hasty, snappy, mercurial, swiftly, rapidly, quickly, snappily, speedily, lickety-split, posthaste, hastily, expeditiously, like a flash
Fat — stout, corpulent, fleshy, beefy, paunchy, plump, full, rotund, tubby, pudgy, chubby, chunky, burly, bulky, elephantine
Fear — fright, dread, terror, alarm, dismay, anxiety, scare, awe, horror, panic, apprehension
Fly — soar, hover, flit, wing, flee, waft, glide, coast, skim, sail, cruise
Funny — humorous, amusing, droll, comic, comical, laughable, silly
Get — acquire, obtain, secure, procure, gain, fetch, find, score, accumulate, win, earn, rep, catch, net, bag, derive, collect, gather,

glean, pick up, accept, come by, regain, salvage
Go — recede, depart, fade, disappear, move, travel, proceed
Good — excellent, fine, superior, wonderful, marvelous, qualified, suited, suitable, apt, proper, capable, generous, kindly, friendly, gracious, obliging, pleasant, agreeable, pleasurable, satisfactory, well-behaved, obedient, honorable, reliable, trustworthy, safe, favorable, profitable, advantageous, righteous, expedient, helpful, valid, genuine, ample, salubrious, estimable, beneficial, splendid, great, noble, worthy, first-rate, top-notch, grand, sterling, superb, respectable, edifying

Great — noteworthy, worthy, distinguished, remarkable, grand, considerable, powerful, much, mighty
Gross — improper, rude, coarse, indecent, crude, vulgar, outrageous, extreme, grievous, shameful, uncouth, obscene, low
Happy — pleased, contented, satisfied, delighted, elated, joyful, cheerful, ecstatic, jubilant, gay, tickled, gratified, glad, blissful, overjoyed
Hate — despise, loathe, detest, abhor, disfavor, dislike, disapprove, abominate
Have — hold, possess, own, contain, acquire, gain, maintain, believe, bear, beget, occupy, absorb, fill, enjoy
Help — aid, assist, support, encourage, back, wait on, attend,

serve, relieve, succor, benefit, befriend, abet
Hide — conceal, cover, mask, cloak, camouflage, screen, shroud, veil
Hurry — rush, run, speed, race, hasten, urge, accelerate, bustle
Hurt — damage, harm, injure, wound, distress, afflict, pain
Idea — thought, concept, conception, notion, understanding, opinion, plan, view, belief
Important — necessary, vital, critical, indispensable, valuable, essential, significant, primary, principal, considerable, famous, distinguished, notable, well-known
Interesting — fascinating, engaging, sharp, keen, bright, intelligent, animated, spirited, attractive, inviting, intriguing, provocative, though-

provoking, challenging, inspiring, involving, moving, titillating, tantalizing, exciting, entertaining, piquant, lively, racy, spicy, engrossing, absorbing, consuming, gripping, arresting, enthralling, spellbinding, curious, captivating, enchanting, bewitching, appealing
Keep — hold, retain, withhold, preserve, maintain, sustain, support
Kill — slay, execute, assassinate, murder, destroy, cancel, abolish
Lazy — indolent, slothful, idle, inactive, sluggish
Little — tiny, small, diminutive, shrimp, runt, miniature, puny, exiguous, dinky, cramped, limited, itsy-bitsy, microscopic, slight, petite, minute

Look — gaze, see, glance, watch, survey, study, seek, search for, peek, peep, glimpse, stare, contemplate, examine, gape, ogle, scrutinize, inspect, leer, behold, observe, view, witness, perceive, spy, sight, discover, notice, recognize, peer, eye, gawk, peruse, explore
Love — like, admire, esteem, fancy, care for, cherish, adore, treasure, worship, appreciate, savor
Make — create, originate, invent, beget, form, construct, design, fabricate, manufacture, produce, build, develop, do, effect, execute, compose, perform, accomplish, earn, gain, obtain, acquire, get
Mark — label, tag, price, ticket, impress, effect, trace, imprint, stamp,

brand, sign, note, heed, notice, designate
Mischievous — prankish, playful, naughty, roguish, waggish, impish, sportive
Move — plod, go, creep, crawl, inch, poke, drag, toddle, shuffle, trot, dawdle, walk, traipse, mosey, jog, plug, trudge, slump, lumber, trail, lag, run, sprint, trip, bound, hotfoot, high-tail, streak, stride, tear, breeze, whisk, rush, dash, dart, bolt, fling, scamper, scurry, skedaddle, scoot, scuttle, scramble, race, chase, hasten, hurry, hump, gallop, lope, accelerate, stir, budge, travel, wander, roam, journey, trek, ride, spin, slip, glide, slide, slither, coast, flow, sail, saunter, hobble, amble, stagger, paddle, slouch, prance,

straggle, meander, perambulate, waddle, wobble, pace, swagger, promenade, lunge
Moody — temperamental, changeable, short-tempered, glum, morose, sullen, mopish, irritable, testy, peevish, fretful, spiteful, sulky, touchy
Neat — clean, orderly, tidy, trim, dapper, natty, smart, elegant, well-organized, super, desirable, spruce, shipshape, well-kept, shapely
New — fresh, unique, original, unusual, novel, modern, current, recent
Old — feeble, frail, ancient, weak, aged, used, worn, dilapidated, ragged, faded, broken-down, former, old-fashioned, outmoded, passe, veteran, mature, venerable, primitive,

traditional, archaic, conventional, customary, stale, musty, obsolete, extinct
Part — portion, share, piece, allotment, section, fraction, fragment
Place — space, area, spot, plot, region, location, situation, position, residence, dwelling, set, site, station, status, state
Plan — plot, scheme, design, draw, map, diagram, procedure, arrangement, intention, device, contrivance, method, way, blueprint
Popular — well-liked, approved, accepted, favorite, celebrated, common, current
Predicament — quandary, dilemma, pickle, problem, plight, spot, scrape, jam

Put — place, set, attach, establish, assign, keep, save, set aside, effect, achieve, do, build
Quiet — silent, still, soundless, mute, tranquil, peaceful, calm, restful
Right — correct, accurate, factual, true, good, just, honest, upright, lawful, moral, proper, suitable, apt, legal, fair
Run — race, speed, hurry, hasten, sprint, dash, rush, escape, elope, flee
Say/Tell — inform, notify, advise, relate, recount, narrate, explain, reveal, disclose, divulge, declare, command, order, bid, enlighten, instruct, insist, teach, train, direct, issue, remark, converse, speak, affirm, suppose, utter, negate, express, verbalize, voice, articulate, pronounce, deliver, convey, impart,

assert, state, allege, mutter, mumble, whisper, sigh, exclaim, yell, sing, yelp, snarl, hiss, grunt, snort, roar, bellow, thunder, boom, scream, shriek, screech, squawk, whine, philosophize, stammer, stutter, lisp, drawl, jabber, protest, announce, swear, vow, content, assure, deny, dispute

Scared — afraid, frightened, alarmed, terrified, panicked, fearful, unnerved, insecure, timid, shy, skittish, jumpy, disquieted, worried, vexed, troubled, disturbed, horrified, terrorized, shocked, petrified, haunted, timorous, shrinking, tremulous, stupefied, paralyzed, stunned, apprehensive

Show — display, exhibit, present, note, point to, indicate, explain, reveal, prove, demonstrate, expose

Slow — unhurried, gradual, leisurely, late, behind, tedious, slack
Stop — cease, halt, stay, pause, discontinue, conclude, end, finish, quit
Story — tale, myth, legend, fable, yarn, account, narrative, chronicle, epic, sage, anecdote, record, memoir
Strange — odd, peculiar, unusual, unfamiliar, uncommon, queer, weird, outlandish, curious, unique, exclusive, irregular
Take — hold, catch, seize, grasp, win, capture, acquire, pick, choose, select, prefer, remove, steal, lift, rob, engage, bewitch, purchase, buy, retract, recall, assume, occupy, consume
Tell — disclose, reveal, show, expose, uncover, relate, narrate,

inform, advise, explain, divulge, declare, command, order, bid, recount, repeat
Think — judge, deem, assume, believe, consider, contemplate, reflect, mediate
Trouble — distress, anguish, anxiety, worry, wretchedness, pain, danger, peril, disaster, grief, misfortune, difficulty, concern, pains, inconvenience, exertion, effort
True — accurate, right, proper, precise, exact, valid, genuine, real, actual, trusty, steady, loyal, dependable, sincere, staunch
Ugly — hideous, frightful, frightening, shocking, horrible, unpleasant, monstrous, terrifying, gross, grisly, ghastly, horrid, unsightly, plain,

homely, evil, repulsive, repugnant, gruesome
Unhappy — miserable, uncomfortable, wretched, heart-broken, unfortunate, poor, downhearted, sorrowful, depressed, dejected, melancholy, glum, gloomy, dismal, discouraged, sad
Use — employ, utilize, exhaust, spend, expend, consume, exercise
Wrong — incorrect, inaccurate, mistaken, erroneous, improper, unsuitable

The end

PHYSICS:-

Q.1 When a helium atom loses an electron, it becomes:

A) An alpha particle. C) A positive helium ion.

B) Proton. D) A negative helium ion.

Q.2 Beta ray emitted by a radioactive substance is:

A) An electron which was existing outside the nucleus.

B) An electron which was existing inside the nucleus.

C) An electron emitted by the nucleus as a result of the decay of neutron inside the nucleus.

D) A pulse of electromagnetic wave.

Q.3 An electric charge in uniform motion produces:

A) An electric field. C) Both magnetic and electric fields.

B) A magnetic field. D) Neither magnetic nor electric fields.

Q.4 What is emitted by a hot metal filament in a cathode ray tube?

A) X-ray. C) Electron.

B) Proton. D) Photon.

Q.5 If the mass of the bob of a pendulum is doubled its time period is:

A) Halved. C) Unchanged.

B) Doubled. D) Increases four times.

Q.6 The centre of Newton rings is dark due to:

A) Polarization. C) Constructive interference.

B) Destructive interference. D) Reflection.

A B C D

ID

1

2

3

4

Q.7 Which one is most stable element on the basis of binding energy?

A) Sn. C) Kr.

B) Ba. D) Fe.

Q.8 Resistance in RC circuit of time constant 2 seconds is 1000 Ohms. What is value of C in the

circuit?

A) 2 μ farad. C) 200 μ farad.

B) 20 μ farad. D) 2000 μ farad

Q.9 The Lenz's law refers to induced _____

A) emf. C) Shear.

B) Resistance. D) Currents.

Q.10 In which of the following, output is similar to NAND gate if input A=0 and input B=1.

A) NOR. C) XOR.

B) XNOR. D) Both B and C.

Q.11 For atomic hydrogen spectrum, which of the following series lies in visible region of

electromagnetic spectrum?

A) Lyman series. C) Balmer series.

B) Paschen series. D) Bohr series.

Q.12 _____ are the particles that experience strong nuclear force.

A) Electrons. C) Neutrinos.

B) Muons. D) Neutrons.

Q.13 The vertical velocity of ball thrown upward _____ with time.

A) Decreases linearly. C) Doubles.

B) Remains constant. D) Decreases parabolically.

Q.14 The force required to bend the normally straight path of a particle into a circular path is called

_____ force.

A) Traveling. C) Centrifugal.

B) Bending. D) Centripetal.

Q.15 A disc at rest without slipping, rolls down a hill of height (3 x 9.8) m. What is its speed in m/sec

when it reaches at the bottom?

A) 11.4. C) 22.8.

B) 19.6. D) 9.8.

Q.16 Tuning of the radio is the best example of electrical _____

A) Resonance. C) Current.

B) Resistance. D) None of these.

Q.17 A standing wave pattern is formed when the length of string is an integral multiple of

_____ wavelength.

A) Triple. C) Half.

B) Full. D) Double.

Q.18 Which of the following lights travels the fastest in optical fibres?

A) Visible light. C) Ultra-violet.

B) Invisible infra-red. D) Ordinary light.

Q.19 The algebraic sum of potential changes in a closed circuit is zero is Kirchhoff's _____ rule.

A) First. C) Third.

B) Second. D) None of these.

Q.20 In LED when an electron combines with a _____ during forward bias conduction, a photon

of visible light is emitted.

A) High voltage. C) Hole.

B) Photon. D) Positron.

Q.21 For photons of energy greater than 1.02 MeV the probability of pair production occurrence

_____ as the energy increases.

A) Increase. C) Reduces to half.

B) Completely diminishes. D) Remains unchanged.

Q.22 The neutron is assumed to be made of

A) One up quark and two down quarks.
C) Two up quarks and one down quark.

B) Two up quarks and two down quarks.
D) One up quark and one down quark.

Q.23 An _____ missile is called a ballistic missile.

A) Un-powered and guided. C) Powered and guided.

B) Un-guided and powered. D) Un-powered and un-guided.

Q.24 Two cylinders of equal mass are made from same material. The one with the larger diameter

accelerates _____ the other under the action of same torque.

A) Faster than. C) Equal to.

B) Slower than. D) None of these.

Q.25 The angular frequency of simple pendulum is directly proportional to _____

A) l. C) v l.

B) 1/l. D) v1/l.

Q.26 Two waves of slightly different frequencies and traveling in same direction produce _____

A) Interference. C) Stationary waves.

B) Polarization. D) Beats.

Q.27 A single mode step index fibre has core of about _____ µm diameter

A) 50 to 1000. C) 30.

B) 50. D) 5.

Q.28 A 5 Ohm resistor is indicated by a single _____ color band around its body.

A) Red. C) Blue.

B) Green. D) Brown.

Q.29 Practically _____ current flows in a reverse biased p-n junction.

A) No. C) Few milliamperes.

B) Very large. D) Both A and C.

Q.30 Cesium coated oxidized silver emits electrons for _____ light.

A) Infrared. C) Visible.

B) Ultraviolet. D) Green.

Q.31 The cobalt is absorbed by

A) Bones. C) Liver.

B) Skin. D) Thyroid gland.

Q.32 In a step-down transformer the output current _____

A) Is reduced. C) Remains same.

B) Is increased. D) None of these.

Q.33 Force in terms of base units is expressed as

A) kg ms-2

. C) kg m2

s-3

.

B) kg m2s-2

. D) None of these.

Q.34 100 joules work has been done by an agency in 10 seconds. What is power of agency?

A) 1000 watt. C) 10 watt.

B) 100. D) 0.10 watt.

Q.35 The acceleration is proportional to the displacement and is directed towards mean position in

_____ motion.

A) Gravity. C) Uniform.

B) Simple harmonic. D) Projectile.

Q.36 In gases, the speed of sound is inversely proportional to _____ of the density when other

factors are same.

A) Square root. C) Third power.

B) Square. D) Third root.

Q.37 A watch maker uses _____ to repair the watches.

A) Telescope. C) Convex lens.

B) Convex mirror. D) Concave lens.

Q.38 A 2m long pipe is open at both ends. What is its harmonic frequency?

A) 42.5 Hz. C) 220 Hz.

B) 85 Hz. D) None of these.

Q.39 A wire has resistance 100 Ohm at 0 oC and 200 Ohm at 100 oC. What is its temperature coefficient

in K-1?

A) -0.01. C) 0.01.

B) -1/273. D) 1/273.

Q.40 The net magnetic field created by the electrons within an atom is due to the field created by

their _____ motion.

A) Orbital. C) Orbital & spin.

B) Spin. D) Orbital x spin.

Q.41 At high temperature, the proportion of _____ wavelength radiation increase.

A) AM radio. C) Shorter.

B) Long radio. D) Both A and C.

Q.42 In photoelectric effect removal of photons is observed at _____ energies.

A) Low. C) Intermediate.

B) High. D) Both A and C.

Q.43 Which device is the most efficient?

A) Nuclear reactor. C) Silicon solar cell.

B) Storage battery. D) Dry battery cell.

Q.44 The units of E in E=mc2 are

A) kg m s-2

. C) kg m2 s-2.

B) N m s-2. D) Both B and C.

Q.45 Work done on a body equals change in its _____ energy.

A) Total. C) Kinetic.

B) Potential. D) All of these.

Q.46 A pipe varies uniformly in diameter from 2 m to 4 m. An incompressible fluid enters the pipe

with velocity 16m/sec. What is velocity of fluid when it leaves the pipe?

A) 64 m/sec. C) 8 m/sec.

B) 32 m/sec. D) 4 m/sec.

Q.47 Transverse waves cannot be setup in _____

A) Metals. C) Fluids.

B) Solids. D) Soil.

Q.48 The ratio of the _____ is called magnification.

A) Image size to object size. C) Eyepiece size to object size.

B) Object size to image size. D) None of these

Q.49 Which of the following has the highest resistivity?

A) Germanium. C) Copper.

B) Silver. D) Platinum.

Q.50 An n-type semi-conductor is made by doping silicon crystal with _____

A) Indium. C) Arsenic.

B) Aluminium. D) Both B and C.

Q.51 Objects cannot be accelerated to the speed of light in free space is consequence of

A) Mass variation. C) Inertia forces.

B) Energy-mass relationship. D) All of these.

Q.52 A certain radioactive mass decays from 64 gm to 2 gm in 20 days. What is its half-life?

A) 5 days. C) 10 days.

B) 4 days. D) 6 days.

Q.53 If inductance is denoted by L and resistance by R, which of the following is true for a choke?

A) R is large, L is very small. C) Both R and L are large.

B) R is very small, L is large. D) Both R and L are very small.

Q.54 A force 2i + j has moved its point of application from (2,3) to (6,5). What is work done?

A) -10. C) -18.

B) +10. D) +18.

Q.55 The escape velocity corresponds to _____ energy gained by body, which carries it to an

infinite distance from the surface of earth.

A) Total. C) Initial kinetic.

B) Potential. D) None of these.

Q.56 The drag force decreases as the speed of an object moving through fluid _____

A) Increases. C) Remains constant.

B) Decreases. D) Both B and C.

Q.57 Light year is a measure of

A) Distance. C) Intensity of light.

B) Time. D) Velocity.

Q.58 A yellow light of wavelength 500 mm emitted by a single source passes through two narrow slits

1 mm apart. How far apart are two adjacent bright fringes when interference is observed on a

screen 10 m away?

A) 5 mm. C) 0.5 mm.

B) 1.33 mm. D) 50 mm.

Q.59 The heat produced by a current I in the wire of resistance R during time interval t is

A) I2/Rt. C) I2/R/t.

B) I2

Rt. D) IR2t.

Answer.

ID D **46** D
1 C **47** C
2 B **48** A
3 C **49** B
4 C **50** C
5 C **51** D
6 B **52** B
7 D **53** B
8 C **54** B **55** C
10 C **56** B
11 C **57**
12 D **58** A
13 C **59** B
14 D **60**

“ physics MCQs from 60 to onwards … “

Q.2 Radian is a unit of angular displacement which can also be measured in degrees. How many radians are equal to one degree?

A) 180
π
C) 2π
180
B) π
180 D) π
57.3

Q.3 An elevator is moving upwards with constant velocity

of ‘v’. What is a weight of a person of a
mass ‘m’ inside the elevator during upward motion?
A) mg + mv C) mg — mv
B) mg D) zero
Q.4 An object having spherical shape of radius ‘r’ experiences a retarding force F from a fluid of coefficient
of viscosity ‘η’ when moving through the fluid with speed ‘v’. What is the ratio of
retarding force to speed?
A) 6πη r2 C) 6πη r
B) 6πη/r2 D) 6πη/r
Q.5 When the drag force is equal to the weight of the droplet, the droplet will fall with:

A) High Speed C) Certain acceleration
B) Low Speed D) Constant Speed
A B C D
ID
1
2
3
4

Q.6 A simple pendulum length 'L' with bob of mass 'm' is slightly displaced from its mean position so that it string makes an angle 'θ' with vertical line as shown in the figure. Then bob of pendulum released. What will be the expression of torque with which the bob starts to move towards the mean position?

g l
θ
m
A) mgL C) 0
B) mgL sin θ D) mgL cos θ
Q.7 The density of blood is:
A) Less than water C) Greater than water
B) Nearly equal to water D) Three times that of water
Q.8 A monochromatic light of wavelength 'λ' is used to produce the diffraction pattern through a
single slit of width X. Which one of the following represents the intensity distribution across the screen?
A) C)

B) D)

Q.9 For interference of light waves to take place, the required condition is

A) The path difference of the light waves from the two sources must be large

B) The interfering waves must be non-coherent

C) The light waves may come from different sources

D) The light waves must come from two coherent sources

Q.10 The property of bending of light around an obstacle and spreading of light waves into geometric shadow of an obstacle is called:

A) Diffraction of Light C) Quantization of Light
B) Polarization of Light D) Interference of Light

Q.11 The normal human eye can focus a sharp image of an object on the eye if the object is located at certain distance called

A) Least Point C) Far Point
B) Near Point D) Distinct Point

Q.12 A source of sound wave emits waves of frequency ‘f’. If ‘v’ is speed of sound waves, then what will be the wavelength of the waves

A) v
f C) v uo
f

B) vf D) (v – uo)f

Q.13 The spectrum of a star's light is measured and the wavelength of one of the lines as the sodium's line is found to be 589 nm. The same line has the wavelength of 497 nm when observed in the laboratory. This means the star is

A) Moving away from the earth C) Stationary

B) Moving towards the north D) Revolving around the planet

Q.14 What is the period of mass spring system during SHM if the ratio of mass to spring constant is

¼?

A) π C) 1/π

B) 2 π D) ½ π

Q.15 Waveform of SHM is given in figure. At what time/times displacement is equal to zero?

A) T/4 only C) 0, T/4, 3T/4 and T

B) 3T/4 only D) 0, T/2 and T

Q.16 A wire is stretched by a force which causes an extension. The energy is stored in it only when:

A) The extension of wire is proportional to force applied

B) The cross-section area of the wire remains constant

C) The wire is not stretched beyond its elastic limit

D) The weight of wire is negligible

Q.17 Which statement is correct:

A) Elasticity is that property of body which enables body to regain its original dimension

B) Elasticity is that property of a body that does not allow it to return to its original shape

C) Elasticity is that property of a body that allows it to retain its original shape and dimension after the stress is removed.

D) Elasticity is that property of a body that obeys Hooke's law.

Q.18 Which of the following is the expression of root mean square speed of a gas having n number of molecules contained in the container?

A)v1
2+ v2
2+…+ vx
2
N C)v1+ v2+…+ vx
N
B) v1
2+ v2
2+…+ vx
2
N D) v1+ v2+…+ vx
N

Q.19 For a gas of volume V in its equilibrium state, if the pressure does change with time then total kinetic energy of gas is constant because

A) Collisions between gas molecules occur C) Collisions must be elastic

B) Collisions between gas molecules occur linearly D) Collisions must be inelastic

Q.20 Which of the following is the proper way to study the sinusoidal waveform of the voltage?

A) Voltage is connected to X input and the time base is switched off
B) Voltage is connected to Y input and the time base is switched on
C) Voltage is connected to Y input and the time base is switched off
D) Voltage is connected to X input and the time base is switched on

Q.21 Electron gun in cathode ray oscilloscope contains

A) Filament, cathode, grid, anodes C) Emitter, base, collector

B) Cathode, anode, capacitor, screen
D) Resistance, capacitor, inductor
B
C 3T/4
A T/4 T
D
Displacement

Q.22 In which of the following, the change in internal energy is more?
A) In system A C) Cannot be predicted
B) In system B D) Change is zero in both. (both are cyclic)
Q.23 Pressure volume graph of two systems 'A' and 'B' are plotted under isothermal and adiabatic

conditions. Which of the following observation of graph represents the two systems?

A) C)

B) D)

Q.24 Which of the following curve is an isotherm?

A) C)

B) D)

Q.25 If 2 A current passes through a resistor when connected to a certain battery. If the resistance is replaced by the double resistance, then the current will become

A) 2 A C) 6 A

B) 4 A D) 1 A

Q.26 In Helium-Neon laser, population inversion of _____ atoms is achieved which emit radiations, when they are stimulated to fall at lower level.

A) Neon C) Helium and Neon

B) Helium D) Chromium

Q.27 Three resistors each having value 'R' are connected as shown in figure. What is the equivalence resistance between 'X' and 'Y'?

A) 3R C) R/3

B) R D) R3

Q.28 If the number of turns of a solenoid circular coil is doubled,

but the current in the coil and radius
of the coil remains same, then what will be the magnetic flux density produced by the coil?

A) Magnetic flux density will be halved

B) Magnetic flux density increases by different amount at different points

C) Magnetic flux density remains unchanged

D) Magnetic flux density will be doubled

Q.29 Two long parallel wires Wire 1 and Wire 2 repel each other as shown in the figure. What could be the reasons?

A) Both carry current in same direction C) Wire 1 has current, but Wire 2 has no current

B) Both carry current in opposite direction D) Wire 2 has current, Wire 1 has no current

Q.30 The diagram shows a wire, carrying a current 'I', placed the poles of a magnet:

In which direction does the force on the wire act?

A) Upwards C) Towards the 'N' pole of the magnet

B) Downwards D) Towards the 'S' pole of the magnet

Q.31 Wavelength of X-rays is the order of:

A) 10-6 m C) 10-13 m

B) 10-10 m D) 100 m

Q.32 Laser beam can be used to generate three-dimensional image of object in a process called:

A) Computed technology C) Holography

B) Computed tomography D) Computerized axial tomography

Q.33 Which of the following is true for Lasers?

A) Electrons are emitted C) Coherent monochromatic light is emitted

B) Stimulated emission of electrons is needed D) There is a population inversion of photons
X R
R
R
Y
F
Wire 1
Wire 2
F
N S
I

Q.34 Three resistors of resistance R1, R2 and R3 are connected as shown in figure. Equivalence resistance is:

A) R1+R2+R3 C) R1R2+ R2R3+ R2R3
R1+ R2
B) R1+ R2+ R3
R1 R2
D) R1 R2 R3
R2 R3

Q.35 What is meant by spontaneous emission of electrons in solids?

A) Electrons being emitted by the solids through photoelectric effect when irradiated with electromagnetic radiation

B) Incident electrons colliding with electrons in solids and releasing doubling the number of incident electrons

C) Electrons in solids are emitted without any external stimulus through radiation
D) Excited electrons going back to lower energy states immediately by releasing energy.

Q.36 When electrons lose all their kinetic energy in the first collision, the entire kinetic appears as an
X-ray photon of energy:

A) K.E = eV C) K.E = $\frac{hc}{\lambda min}$

B) K.E = $\frac{h\lambda min}{c}$

D) K.E = h

λmax

Q.37 The characteristic X-ray spectrum is due to:

A) The absorption of neutrons by target material C) The bombardment of target material by electrons

B) The bombardment of target material by protons D) The bombardment of target material by alpha particles

Q.38 Ionizing capability of gamma rays is:

A) Equal to alpha and beta particle C) Less than both alpha and beta particles

B) Less than alpha but greater than beta particles D) Less than beta but greater than alpha particles

Q.39 Half-life of a radioactive element is:

A) Inversely proportional to square of decay constant C) Directly proportional to decay constant

B) Directly proportional to square of decay constant D) Inversely proportional to decay constant

Q.40 The transformation of a neutron into proton in the nucleus gives rise to emission of:

A) Beta particles C) Gamma particles

B) Alpha particles D) X-rays

Q.41 The ratio of the rate of decay of a parent atom to the number of radioactive nuclei present at
that time is equal to:

A) Half-life of radioactive element C) Decay constant of radioactive element
B) Mean life D) Activity if radioactive element

Q.42 Which one of the following particle is emitted as a result of nuclear reaction?

Ra226 Rn222

A) Beta C) Gamma rays
B) Alpha D) One alpha and one beta

Q.43 Which of following is used to estimate the circulation of blood in a patient?

A) Carbon-14 C) Phosphorus-32
B) Carbon-12 D) Sodium-24

Q.44 For the radiotherapy of a patient, it is required to double

the absorbed dose in gray. What step
must be taken?

A) Energy must be quadrated C) Energy must be raised four times
B) Energy must be halved D) Energy must be doubled

ANSWER

1 B
2 B
3. B
4 B
5 D
6 B
7 B
8 C
9 D
10 A
11 B
12 A
13 A
14 A
15 D
16 A

17 C
18 A
19 C
20 B
21 A
22 D
23 A
24 D
25 D
26 A
27 A
28 D
29 B
30 B
31 B
32 C
33 D
34 C
35 D

36 A
37 C
38 C
39 D
40 A
41 C
42 B
43 D
44 D

PHYSICS (to be cont…)

Q.1 One method of creating an inverted population is known as _____ and consist of

illuminating the laser material with light.

A) Optical Pumping C) Bremsstrahlung

C) Excitation D) Holography

Q.2 In population inversion (Ruby Laser) atoms can reside in the excited state for:

A) 10-11 C) 10-3

C) 10-8 D) 10+3

Q.3 If electrons of charge ‘e’ moving with velocity ‘v’ are accelerated through a potential difference ‘V’ and strike a metal target, then velocity of electrons is:

A) $\frac{Ve}{m}$

C) $\sqrt{Ve}$

2m
B) √Ve
m
D) √2Ve
m
Q.4 In X-ray tube, electrons after being accelerated through velocity ‘v’ strike the target, then the wavelength of emitted X-rays is:
A) Not greater than
hc
eV
C) Equal to the
h
mV
B) Not less than
hc
eV
D) Equal to

hc
eV
A B C D
ID
1
2
3
4

Q.5 In the reaction, 92Th
234 → Y 91
234 + -1e
0 the electron e -1
0 emits from the
A) 1st Orbit C) Nucleus
B) 2nd Orbit D) Valence Shell
Q.6 According to the equation ZX
A → Y + 3α particles, what are the
atomic and mass numbers

of ‘Y’?

A) Z – 6, A – 12 C) Z + 1, A

B) Z – 2, A – 4 D) Z + 3, A

Q.7 A certain radioactive nuclide of mass number ‘x’ decays by β- emission and α-emission to a second nuclide of mass number ‘t’. Which of following correctly relates ‘x’ and ‘t’?

A) x = t + 4 C) x – 3 = t

B) x = t – 4 D) x – 1 = t

Q.8 During the decay of radioactive isotopes $^{232}_{90}X$ to a stable isotope, six α-particles and four β- particles are emitted, what is the atomic number ‘Z’ and mass number ‘A’ of the stable isotopes.

A) Z = 70, A = 220 C) Z = 82, A = 212

B) Z = 78, A = 212 D) Z = 82, A = 208

Q.9 Cobalt 60 is used in medicine and is an intense source of:

A) α-particles C) γ-rays

B) β-particles D) Neutrons

Q.10 In fluid flow, for the equation of continuity A1v1 = A2v2. If velocity of the fluid at one end is
doubled, then what will be the cross-sectional area at this end?

A) Double C) (Half)2

B) Half D) (Double)2

Q.11 The value of least distance vision for normal eye is

A) 20 cm C) 25 cm

B) 30 cm D) 40 cm

Q.12 The distance between two dark adjacent fringes is mathematically written as:

A) $\Delta Y = \frac{\lambda L}{d}$

C) $\Delta Y = \frac{\lambda d}{L}$

B) $\Delta Y = \frac{\lambda}{dL}$

D) $\Delta Y = \frac{d}{\lambda L}$

Q.13 In Young's Double Slit Experiment, slit separation x = 0.05 cm, distance between screen and

slit D = 200 cm, fringes separation x = 0.13 cm, then the wavelength ‘λ’ of light is:

A) λ = 1.23 x 10-2 m C) λ = 4.55 x 10-5 m

B) λ = 3.25 x 10-7 m D) λ = 5.1 x 10-7 m

Q.14 In normal adjustment of compound microscope, the eye piece is positioned so that the final image is formed at:

A) Optical Center C) Principle Focus

B) Infinity D) Near Point

Q.15 Mathematical formula of maximum velocity (vo) for a body executing simple harmonic motion is:

A) vo = ωxo C) vo = v $\sqrt{1 -$ x2

xo
2
B) vo =
k
m
√xo
2 – x2 D) vo = m √xo
2 – x2
Q. 16 A body is having weight 20 N, when the elevator is descended with a = 0.1 ms-2, then the value of tension ‘T’ is:
A) 196 N C) 1.98 N
C) 19.8 N D) 2 N

Q.17 Sodium 24 has half-life of 15 hour and it is used in medicine to estimate:
A) Kidney Function C) Iron in Plasma

B) Plasma Blood Volume D) Thyroid Function

Q.18 The unit of temperature in base unit is:

A) Celsius C) Kelvin

B) Degree D) Fahrenheit

Q.19 The dimensions of pressure is:

A) [M-1L2T-2] C) [M-1L-2T-2]

B) [ML-1T] D) [ML-1T-2]

Q.20 In Wilson Cloud Chamber which of the following tracks represented β-particles?

A) C)

B) D)

Q.21 Mass flow per second of the fluid is given by:

A) ρAv C) ρv

B) Av D)AvP

Q.22 The dimension of coefficient of viscosity is:

A) [M-2L-1T-1] C) [ML-2T1]

B) [ML-2T-1] D) [ML-1T-1]

Q.23 What should be the length of simple pendulum whose period is 6.28 second at a place where g = 10 ms-2.

A) 0.28 m C) 6.28 m

B) 10.8 m D) 10 m

Q.24 What should be the ration of kinetic energy to total energy for simple harmonic oscillator?

A) 1 – x2

xo

2 C) (xo

2 – x2)

B) 1 D)

1

2
x2
Q.25 An observer moves with velocity ‘vo’ toward a stationary source, then the number of waves received in one second is:
A) f' = f (
v
v + vo
) C) f' = f (
v + vo
v
)
B) f' = f (
v
v – vo
) D) f' = f (
v – vo
v

)
Q.26 Strain energy in a deformed energy is stored in the form of:
A) Elastic Energy C) Plastic Energy
B) Potential Energy D) Kinetic Energy

Q.27 A wire of area of cross section ‘A’ and original length ‘l’ is subjected to a load ‘L’. A second wire of same material with an area is ‘2A’ and length ‘2l’ is subjected to the same load ‘L’. If the extension in first wire is ‘X’ and second wire is ‘Y’, find the ratio ‘X/Y’.
A)
1
4
C)
1

1
B)
1
2
D)
2
1
Q.28 Two sample of gases ‘1’ and ‘2’ are taken at same temperature and pressure but the ratio of number of their volume is V1:V2 = 2:3. What is the ration of number of moles of the gas sample?

A) 3:2 C) 4:9

B) $\sqrt{2}:\sqrt{3}$ D) 2:3

Q.29 Root mean square velocity of a gas having pressure ‘P’ and density ‘ρ’ is given by:

A) $\sqrt{}$

$\frac{3P}{\rho}$

C) $\sqrt{\frac{3\rho}{P}}$

B) $\frac{3P}{\rho}$

D) $\frac{3\rho}{P}$

Q.30 When the rate of gas changes without change in temperature, the gas is said to undergo:

A) Isothermal Process C) Isochoric Process

B) Adiabatic Process D) Isobaric Process

Q.31 What is the 273 k on the Celsius scale of temperature?

A) 0.15 oC C) -0.15 oC
B) 273.15 oC D) -273.15 oC
Q.32 If heat ‘Q1’ is absorbed at temperature ‘T’ and heat ‘Q2’ is absorbed at temperature of triple point
of water, then unknown temperature of system (in K) is:
A) 273.16 C) 273.16 Q
B) 273.16 Q2/Q1 D) 273.16 Q1/Q2
Q.33 If the fundamental logic gates are connected as:
A
B
A
B
What are the mathematical notation for this logic gate?
A) $(\overline{A} + \overline{B}).(A + B)$ B) $(\overline{A} + \overline{B}).(\overline{A} + \overline{B})$

C) $(A + B)(\bar{A} + \bar{B})$ D) $\bar{A}B + A\bar{B}$

Q.34 Which combinations of seven identical resistors each of 2 Ω gives rise to the resultant of 10/11 Ω?

A) 5 Parallel, 2 Series C) 3 Parallel, 4 Series

B) 4 Parallel, 3 Series D) 2 Parallel, 5 Series

ANSWER

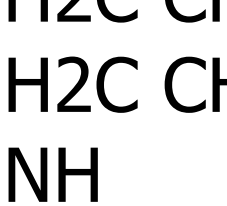
ID B 46 D 92 B 138 C 184 B
1 A
2 B
3 D
4 D
5 C
6 A
7 A
8 D
9 C
10 B
11 C
13 B
14 D
15 A
16 C

17 B
18 C
19 D
20 C
21 A
22 D
23 D
24 A
25 C
26 B
27 C
28 D
29 A
30 A
31 C
32 D
33 B
34 D
35 C

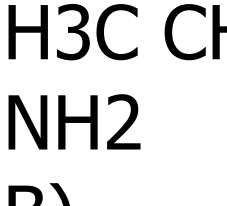
CHEMISTRY

Q.45 Which one of the following is structural formula of proline?

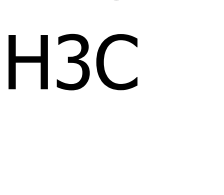
A)



C)



B)



D)
CH2 COOH
NH2

Q.46 In the formation of Zwitter ion which one of the following donates the proton?

A) COOH C) CH_2COO^-
B) NH2 D) OH^-

Q.47

What is the name of above given structural formula?

A) Aspartic Acid C) Adipic Acid
B) Asparagine D) Glutamic Acid

Q.48 Which one of the following is simplest amino acid?

A) Lysine C) Alanine
B) Leucine D) Glycine

Q.49 Which one of the following polymer is called as Nylon 6,6?

A) Polyester C) Polyamide
B) Polyvinyl chloride D) Polyvinyl acetate

Q.50 Which one of the following is an exact composition of a carbohydrates?

A) Carbon and Hydrogen C) Carbon, Hydrogen and Oxygen
B) Carbon and Oxygen D) Hydrogen and Oxygen

Q.51 Which one of the following nitrogen base is NOT present in DNA?

A) Adenine C) Uracil
B) Guanine D) Cytosine

HOOC CH2 CH2 CH COOH
NH2

Q.52 In the woody parts of trees, the %age of cellulose is:

A) 50% C) 30%

B) 10% D) 100%

Q.53

Choose the right molecule.

A) CH_3 C) H_2O

B) CO D) NH_3

Q.54

Indicate the name of above given structure.

A) Nylon 6,6 C) PVA

B) Adipic Acid D) Polyester

Q.55 In laboratory experiment an unknown compound was added in test tube containing iodine, the

colour became intense blue. What could be the unknown compound?

A) Cellulose C) Ribose

B) Raffinose D) Starch

Q.56 Ozone concentration is measured in:

A) Debye units C) Debacle units

B) Dupont units D) Dobson units

Q.57 The gas which is mainly produced in landfills from the waste is:

A) CH_4 C) SO_2

B) CO_2 D) Cl_2

Q.58 The substance for the separation of isotopes is firstly converted into the:

A) Neutral state C) Vapour state

B) Free state D) Charged state

Q.59 The number of moles of CO_2 which contain 8.00 gm of oxygen is:

A) 0.75 C) 0.25

B) 1.50 D) 1.00

Q.60 London dispersion forces are the only forces present among the:

A) Molecules of H_2O in liquid state C) Atoms of helium in gaseous state at high temperature

B) Molecules of HCl gas D) Molecules of solid chlorine

Q.61 Electrical conductivity of graphite is greater in one direction that in other due to:

A) Isomorphism C) Anisotropy

B) Cleavage plane D) Symmetry

Q.62 Number of neutrons in 30 Zn
66 will be:
A) 30 C) 38
B) 35 D) 36
Q.63 The maximum number of electrons in electronic configuration can be calculated by using
formula:
A) 2l + 1 C) 2n2
B) 2n2 + 2 D) 2n2 + 1
C
O
C
O
O CH2 CH2 O
n

Q.64

Calculate the number of σ bonds and π bonds in the molecule.

A) 1π and 5σ bonds C) 3π and 3σ bonds

B) 2π and 4σ bonds D) 6π and 6σ bonds

Q.65

1

2

H2(g) H(g) ΔH = 218 kJmol-1

In this reaction, ΔH will be called:

A) Enthalpy of atomization C) Enthalpy of formation

B) Enthalpy of decomposition D) Enthalpy of the dissociation

Q.66 Mg +

1

2
O2(g) MgO(g) + -692 kJmol-1 at STP.
Enthalpy of the above reaction will be called:
A) ΔH°at C) ΔH°sol
B) ΔH°s D) ΔH°f
Q.67 Freezing point will also be defined as that temperature at which its solid and liquid phases have
the same:
A) Concentration C) Vapour pressure
B) Ratio between the particles D) Attraction between the phases
Q.68 What mass of NaOH is present in 0.5 mol of sodium hydroxide?
A) 40 gm C) 15 gm

B) 2.5 gm D) 20 gm

Q.69

The diagram shows a galvanic cell. The current will flow from:

A) Hydrogen electrode to copper electrode C) Hydrogen electrode to HCl solution

B) Copper electrode to hydrogen electrode D) CuSO4 solution to hydrogen electrode

Q.70 Study the following redox reaction:

$10Cl^- + 16H^+ + 2MnO_4^- \rightarrow 5Cl_2 + 2Mn^{+2} + 8H_2O$

A) Manganese is oxidized from +7 to +2 C) Chlorine is reduced from zero to -1

B) Chlorine ions are reduced from -1 to zero D) Manganese is reduced from +7 to +2

Q.71 Human blood maintains its pH between:

A) 6.50 - 7.00 C) 7.50 - 7.55

B) 7.20 - 7.25 D) 7.35 - 7.40

Q.72 Value of Ksp for PbSO4 system at 25 °C is equal to:

A) 1.6 x 10-5 mol2dm-6 C) 1.6 x 10-8 mol2dm-6

B) 1.6 x 10-6 mol2dm-6 D) 1.6 x 10-7 mol2dm-6

V

H2(g)

Cu

1M CuSO4 1M HCl

Solution Solution

Porous Partition

C C
H
H
H
H

Q.73 2A + B Product
If the reactant 'B' is in excess, the order of reaction with respect to 'A' in given rate law, Rate = k[A]2[B] is:
A) 2nd order reaction C) Pseudo 1st order reaction
B) 1st order reaction D) 3rd order reaction
Q.74 The rate constant 'k' is 0.693 min-1. The half-life for the 1st order reaction will be:
A) 1 min C) 0.693 min

B) 2 min D) 4 min

Q.75 Melting points of group II-A elements are higher than those of group I-A because:

A) Atoms of II-A elements have smaller size C) Atoms of II-A elements provide two binding electrons

B) II-A elements are more reactive

D) I-A elements have smaller atomic radius

Q.76 The ionic radius of fluoride ion is:

A) 72 pm C) 136 pm

B) 95 pm D) 157 pm

Q.77 2NaOH(aq) + Cl2(g) NaCl + NaClO + H2O proceed at:

A) 500 °C C) -10 °C

B) 200 °C D) 15 °C

Q.78 Which halogen molecule 'X2' has lowest dissociation energy?

A) Cl2 C) I2

B) Br2 D) F2

Q.79 The anomalous electronic configuration shown by chromium and copper among 3-d series of elements is due to:

A) Colour of ions of these metals C) Stability associated with this configuration

B) Variable oxidation states of metals

D) Complex formation tendency of metals

Q.80 Which element of 3d series of periodic table shows the

electronic configuration of 3d6, 4s2?

A) Copper C) Zinc

B) Cobalt D) Nickel

Q.81 The %age of nitrogen in ammonium nitrate is:

A) 46% C) 33%

B) 82% D) 13%

Q.82 Which one of the following is anhydride of sulphuric acid?

A) Sulphur (II) oxide C) Iron pyrite

B) Sulphur (VI) oxide D) Sulphur (VI) oxide

Q.83 During contact process of H2SO4 synthesis, the following reaction occurs:

2SO2(g) + O2(g) 2SO3(g) ΔH = -96 kJmol-1

Which step is used to increase the yield of SO_3?

A) Temperature is raised to very high degree C) Both temperature and pressure are kept very low

B) SO_3 formed is removed very quickly D) An excess of air is used to drive the equilibrium to the right side

Q.84 Synthesis of ammonia by Haber's process is a reversible reaction. What should be done to increase the yield of ammonia in the following reaction?

$N_2(g) + 3H_2(g)$ $2NH_3(g)$ $\Delta H = -92$ kJmol-1

A) Pressure should be decreased C) Pressure should be increased

B) Ammonia should remain in reaction mixture D) Concentration of nitrogen should be decreased

Q.85 Which one of the following reactions shows combustion of a saturated hydrocarbon?

A) $C_2H_4 + 3O_2 \rightleftharpoons 2CO_2 + 2H_2O$ C) $CH_4 + \frac{1}{2} O_2 \xrightarrow[400°C,\ 200\ atm]{Cu} CH_3OH$

B) $CH_4 + 2O_2 \rightleftharpoons CO_2 + 2H_2O$ D) $C_2H_2 + \frac{5}{2} O_2 \rightleftharpoons 2CO_2 + H_2O$

Q.86 Skeletal formula of an organic compound is given below:

It is a hydrocarbon. IUPAC name of the compound is:

A) 3, 3-dimethyl-3-hexene C) 3-hexene

B) 3, 4-dimethyl-3-hexene D) 2,3-dimethyl-1-hexene

Q.87 Which one of the following pairs can be cis-trans isomer to each other?

A) CHCl=CCl2 and CH2=CH2 C) CH3–CH=CH–CH3 and H3C–CH=CH–CH3

B) CHCl=CH2 and CH2=CHCl D) CH3–CH3 and CH2=CH2

Q.88 Consider the reaction given below:
CH_3CH_2Br KOH
alcohol $H_2C=CH_2$ + HBr
Mechanism followed by the reaction is:
A) E2 C) SN1
B) E1 D) SN2
Q.89 The average bond energy of C-Br is:
A) 228 kJmol-1 C) 250 kJmol-1
B) 200 kJmol-1 D) 290 kJmol-1
Q.90 Which one of the following is NOT a nucleophile:
A) NH_2^- C) BF_3
B) H_2O D) CH_3^-
Q.91 Which one of the following is an appropriate indication of positive iodoform test?

A) Formation of H2O C) Brick red precipitate
B) Release of H2 gas D) Yellow crystal

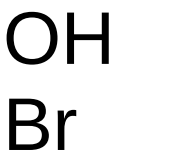
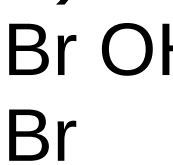
Q.92

Which one of the following is the proper classification of above formula:

A) Primary C) Tertiary
B) Secondary D) Polyhydride

Q.93 Which one of the following is an appropriate structure of product of bromination?

A)
Br
OH
Br
Br C)
OH


B)

D)


Q.94

Which one of the following is an appropriate name of above compound?

A) 1,3,6-Trinitrophenol C) Tartaric acid

B) m-Nitrophenol D) Picric acid

Q.95

It is the general formula of:

A) 2, 4-Dinitrophenyl hydrazine C) Phenyl hydrazone

B) 1, 3-Dinitrophenyl hydrazone D) 2, 4-Dinitrophenyl hydrazone

Q.96

Which one of the following is the IUPAC name of above given structure:

A) Propionaldehyde C) Acetaldehyde

B) Methanone D) Methanal

Q.97 Which one of the following test is given by both aldehyde and ketone?

A) Silver mirror test C) 2, 4 DNPH test

B) Fehling's solution test D) Benedict's solution test

Q.98 $CH_3COOH + CH_3CH_2OH \rightleftharpoons CH_3COOC_2H_5 + H_2O$
Which one of the following will act as a catalyst in above reaction?
A) HNO_3 C) Acidified potassium dichromate
B) H_2SO_4 D) $SOCl_2$
Q.99 $CH_3COOH + PCl_5$?
Which one of the following options shows the products of above reaction?
A) $POCl_2 + CH_3COCl_2 + HCl$ C) $CH_3COCl + POCl_2 + HCl$
B) $POCl_3 + CH_3COCl_2 + H_2$ D) $POCl_3 + CH_3COCl + HCl$
Q.100 Which one of the following reaction of carboxylic acid is reversible?

A) Esterification C) Reaction with PCl5
B) Salt formation D) Reaction with SOCl2

Q.101

Select the best option indicating the name of the above structure:

A) Cation C) Internal salt
B) Neutral amino acid D) Anion

Q.102 When acid is added to an amino acid, which one of the following will act as a base?

A) NH_3^+ C) H^+
B) COO^- D) R group

ANSWER

47 D **93** C

48 D **94** D

49 C **95** D
50 C **96** D
51 C **97** C
52 D **98** B
53 D **99** D
54 C **100** A
55 D **101** C
56 D **102** B
57 A **103 X**
58 C **104** B

59 C **105** D
60 C **106** C
61 C
62 D
63 C
64 A
65 A
66 D
67 C
68 D
69 A

25 A**71** D
26 A **72** C
27 A **73** A
28 C **74** A
29 B **75** C
30 A **76** C
31 X 77 D

32 D **78** D
33 C **79** C
34 C **80** D
35 C **81** C
36 B **82** D
37 C **83** D
38 C **84** C
39 D **85** B
40 D **86** B
41 A **87** C
42 D **88** A
43 C **89** D
44 B **90** C
45 A **91** D

CHEMISTRY TO BE Cont…

Q.45 ‘Ka’ values of few organic acids are given:

Acid Ka Value

CH_3COOH 1.85×10^{-5}

CCl_3COOH 2.3×10^{-2}

$CHCl_2COOH$ 5.0×10^{-3}

$CH_2ClCOOH$ 1.3×10^{-3}

The order of acid strength is:

A) $CCl_3COOH > CHCl_2COOH > CH_2ClCOOH > CH_3COOH$

B) $CH_3COOH > CHCl_2COOH > CCl_3COOH > CH_2ClCOOH$

C) $CHCl_2COOH > CH_3COOH > CCl_3COOH > CH_2ClCOOH$

D) $CCl_3COOH > CH_3COOH > CHCl_2COOH > CH_2ClCOOH$

Q.46 An organic acid ‘z’ reacts separately with sodium bicarbonate, sodium hydroxide and sodium carbonate. Which one of the following represent the structure of ‘z’?

A) $HCOOC_2H_5$ C) CH_3CH_2OH

B) $CH_3—CH=CH_2$ D) $H_3C—CH_2—COOH$

Q.47 Carboxylic acids are rather hard to reduce, which powerful reducing agent can be used to convert them to the corresponding primary alcohol:

A) $H_2SO_4/HgSO_4$ C) $LiAlH_4$

B) V_2O_5 D) $K_2Cr_2O_7/H_2SO_4$

Q.48

N C

H
H
H
H
C
N C C
H
CH3
H
O
O
OH
This structure is
A) Gly-Ala (dipeptide) C) Gly-Val (dipeptide)
B) Asp-Gly (dipeptide) D) Asp-Val (dipeptide)
Q.49 Which one of the following amino acids is basic in nature?

A) Glycine C) Lysine
B) Alanine D) Glutamic acid
Intensity
Wavelength
Intensity
Wavelength
Intensity
Wavelength
Intensity
Wavelength

Q.50 Which one of the following structures shows the correct formula of glutamic acid?
A) H2N CH2 COOH C) H2N CH COOH
COOH
B) H2N CH COOH
(CH2)2
COOH

D) H2N CH COOH
COOH
CH3
Q.51 Select the correct Zwitter ionic structures of an amino acid.
A) NH2
R C COOH +
H
C) H2N+ CH2 COO-
B)
H3N
+
C
H
R
COO-
D)
H3N
+

C
H
R+
COO-
Q.52 How many moles of sodium are present in 0.1 g of sodium?
A) 4.3 × 10-3 C) 4.01 × 10-2
B) 4.03 × 10-1 D) 4.3 × 10-2
Q.53 The structural formula for alanine is:
A) NH2
CH C COOH
H
H3C
H3C C) NH2
CH2 C COOH
H
HO
B) NH2

H C COOH
H
D) NH2
H3C C COOH
H
Q.54 With the help of spectral data given calculate the mass of Neon and encircle the best option.
(Percentage of 10Ne20, 10Ne21 and 10Ne22 are 90.92%, 0.26% and 8.82% respectively).
A) 22.18 amu C) 20.18 amu
B) 21.18 amu D) 22.20 amu
Q.55 Which one of the following pairs has the same electronic configuration as possessed by Neon
(Ne-10)?
A) Na+, Cl— C) Na+, Mg2+
B) K+, Cl— D) Na+, F—

Q.56 If the volume of a gas collected at a temperature of 600 oC and pressure of 1.05 × 105 Nm-2 is 60 dm3, what would be the volume of gas at STP (P=1.01 × 103 Nm-2, T = 273 K)?

A) 25 cm3 C) 100 cm3

B) 75 cm3 D) 51 cm3

Q.57 There are four orbitals s, p, d and f. Which order is correct with respect to the increasing energy of the orbitals?

A) 4s < 4p < 4d < 4f C) 4s < 4f < 4p < 4d

B) 4p < 4s < 4f < 4d D) 4f < 4s < 4d < 4p

Q.58 Which graph represents Boyle’s law?

A) C)
B) D)

Q.59 Which one of the following hydrogen bonds is stronger than others?

A) $N\delta^-—H\delta+ \cdots\cdots\cdots N\delta^-—H\delta+$ C) $O\delta^-—H\delta+ \cdots\cdots\cdots O\delta^-—H\delta+$

B) $F\delta^-—H\delta+ \cdots\cdots\cdots F\delta^-—H\delta+$ D) $N\delta^-—H\delta+ \cdots\cdots\cdots O\delta^-—H\delta+$

Q.60 The half-life of N_2O_5 at 0 oC is 24 minutes. How long will it take for sample of N_2O_5 to decay to 25% of its original concentration?

A) 24 minutes C) 120 minutes
B) 72 minutes D) 48 minutes

Q.61 When the change in concentration is 6 x 10-4 mol dm-3 and time for that change is 10 seconds,

the rate of reaction will be

A) 6 × 10-3 mol dm-3 sec-1 C) 6 × 10-2 mol dm-3 sec-1

B) 6 × 10-4 mol dm-3 se -1 D) 6 × 10-5 mol dm-3 sec-1

Q.62 Which one of the following will have the smallest radius?

A) Al+3 C) Mg+2

B) Si+4 D) Na+1

Q.63 Keeping in view the size of atoms, which order is correct?

A) N > C C) Ar > Cl

B) P > Si D) Li > Be

Q.64 On the basis of oxidizing power of halogens, which reaction is possible?

A) $I_2 + 2Cl^-$ $Cl_2 + 2I^-$ C) $Cl_2 + 2F^-$ $F_2 + 2Cl^-$

B) $Br_2 + 2I^- \quad I_2 + 2Br^-$ D) $I_2 + 2Br^- \quad Br_2 + 2I^-$

Q.65 Which one of the following gases is used as mixture for breathing by sea divers?

A) Oxygen and Nitrogen C) Helium and Oxygen

B) Nitrogen and Helium D) Helium and Hydrogen

Q.66 $[Ti(H_2O)_6]^{+3}$ transmits

A) Yellow and Red light C) Red and white light

B) Yellow and Blue light D) Red and blue light

Q.67 Electronic configuration of Gold [Au79] is

A) [Xe] 4f14, 5d10, 6s1 C) [Xe] 4f14, 5d9, 6s2

B) [Xe] 4f10, 5d10, 6s2 D) [Xe]4f14, 5d10, 6s2

Q.68 About 80% of ammonia is used for the production of

A) Explosives C) Nylon

B) Fertilizers D) Polymers

V

P

PV=k

P

P

1/V

1/V

P

Q.69 Urea is the most widely used nitrogen fertilizer in Pakistan. Its composition Is

A) NH2CO C) N2H4CO2

B) $N_2H_5CO_2$ D) N_2H_4CO

Q.70 During the manufacture of nitric acid, nitric oxide is oxidized to nitrogen dioxide. This reaction is given as:

$2NO(g) + O_2(g) \rightleftharpoons 2NO_2(g)$ $\Delta H = —114$ kJ/mol

According to Le Chatelier's Principle

A) Reaction must not be temperature dependent C) Reaction must be carried out at low temperature

B) Reaction must be carried out at room temperature D) Reaction must be carried out at high temperature

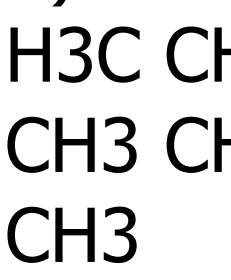
Q.71 What is the percentage of nitrogen in NH_3NO_3?

A) 65% C) 20%

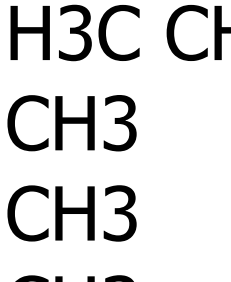
B) 35% D) 58%

Q.72 The structural formula of 2,3,4 trimethylpentane is:

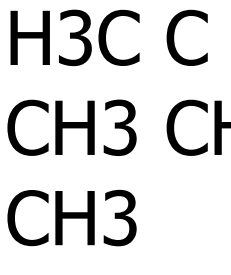
A)



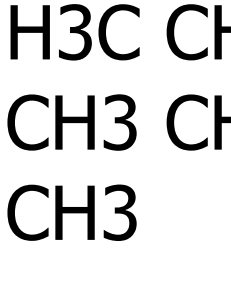
C)



B)



D)



Q.73 Which one of the following is a powerful electrophile used to attack on the electrons of benzene ring?

A) $FeCl_2$ C) Cl^+

B) $FeCl_4^-$ D) Cl_2

Q.74 Order of reactivity of alkenes with hydrogen halide is:

A) HBr > HI > HCl C) HF > HI > HCl

B) HI > HBr > HF D) HI > HBr > HCl

Q.75 The given three hydrocarbons are

Benzene Naphthalene Anthracene

A) Alicyclic hydrocarbons C) Acyclic Hydrocarbons

B) Aromatic hydrocarbons D) Heterocyclic hydrocarbons

Q.76 The IUPAC name of the given compound is

H3C CH CH2 Cl

CH3

A) 1-Chloro-2-methylpropane C) Isobutyl chloride

B) 1-Chloro-2-methylbutane D) 2-Methyl-3-chloropropane

Q.77 Which one of the following was used as one of the earliest antiseptic and disinfectant?

A) Phenol C) Ethanol

B) Ether D) Methanol

Q.78 Which one of the following is NOT able to denature the ethanol?

A) Methanol C) Pyridine

B) Lactic acid D) Acetone

HO

- + C Br
H
H
H C
+
H H
H
Br
-
HO
-
HO C
H
H
H + Br
-

Q.79 In the below reaction, the configuration of product is

δ+ δ— δ— δ+

A) 100% same of the configuration of reactant C) 50% inverted
B) 50% retained D) 100% opposite from configuration of reactant
Q.80 How will you distinguish between methanol and ethanol?
A) By Lucas test C) By oxidation
B) By silver mirror test D) By Iodoform test
Q.81 To produce absolute alcohol (100%) from rectified spirit (95.6% alcohol), the remaining 4.4% water must be removed by a drying agent such as
A) Calcium oxide C) Calcium carbonate
B) Calcium chloride D) Carbon monoxide

Q.82 Which one of the following is also called silver mirror test?

A) Fehling's solution test C) Tollen's reagent

B) Iodoform test D) Benedict's solution tests

Q.83 When acetaldehyde reacts with 2,4-dinitrophenylhydrazine (2,4-DNPH), which one of the following products is formed?

A)

C

CH3

H

N NH NO2

C)

C

CH3

CH3

N NH NO2
NO2
B)
C
CH3
H
N NH NO2
NO2
D)
C
CH3
H
N NH NO2
NO2
Q.84 Both aldehydes and ketones are planer to the neighborhoods of carbonyl (C=O) group. Which one of the following bonds is distorted towards the oxygen atoms?

A) π-bond of C and O C) Sigma bond of C and O
B) Sigma bond of C and H D) Sigma bond of C and C
Q.85 In which one is α-carbon atom?
A) 1 C) 2
B) 3 D) 4
Q.86 The specific substances (metabolite) that fits on the enzyme surface and is converted to products is called
A) Co-factor C) Isoenzyme
B) Prosthetic group D) Substrate
Q.87 Polymide is formed due to the condensation od hexane-dioic acid with
A) Hexane-1,5-diamine C) Hexane-1,4-diamine

B) Hexane-1,6-diamine D) Hexane-2,5-diamine

Q.88 Haemoglobin is a

A) Genetic protein C) Transport protein

B) Building protein D) Structural protein

COOH

1

CH

2

CH

3

CH3

4

CH3 CH3

Q.89 Which one of the following polymer is polystyrene?

A)
CH2 CH
C6H5
n
C)
CF2 CF2
n
B)
CH2 CH2
n D)
CH2 CH
CH3
n
Q.90 Out of these which nitrogen base is NOT present in DNA?
A) Adenine C) Uracil
B) Guanine D) Thymine
Q.91 Which one of the following is an example of co-polymer?

A) Polyamide C) Polyvinyl acetate
B) Polystyrene D) Polyvinyl chloride
Q.92 The biggest source of acid rain is the oxide of
A) N C) O
B) S D) C
Q.93 Burning of which one of the following waste is considered as useful industrial fuel or to produce electricity
A) Metals C) Paper
B) Grass D) Plastic
Q.94 Which of the following is the correct dot and cross diagram of bonding between two chlorine atoms?
A) C)
B) D)

Q.95 The equation that represents standard enthalpy of atomization of hydrogen is:

A)

1

2

$H_2O(l)$ $H_2(g)$ +

1

2

O(g) +218 kJ mol-1 C)

1

2

$H_2(g)$ H(g) +218 kJ mol-1

B)

1

2

$H_2O(l)$ $H_2(g)$ +

1

2

O(g) –218 kJ mol-1 D)
1
2
H2(g) H(g) –218 kJ mol-1
Q.96 Standard enthalpy of combustion of graphite at 25 oC is –393.51 kJ mol-1 and that of diamond is –395.41 kJ mol-1. The enthalpy change for graphite is:
A) – 1.91 C) –2.1
B) +2.1 D) +1.91
Q.97 10.0 grams of glucose are dissolved in water to make 100 cm3 of its solution, its molarity is:
A) 0.55 C) 10
B) 0.1 D) 1
Q.98 Given solution contains 16.0 g of CH3OH, 92.0 g of C2H5OH and 36 g of water. Which statement

about mole fraction of the components is true?
A) Mole fraction of CH_3OH is highest among all C) Mole fraction of CH_3OH and C_2H_5OH is same components
B) Mole fraction of C_2H_5OH and H_2O is the same D) Mole fraction of H_2O is the lowest among all
Q.99 Study the following facts
$Zn \; Zn^{+2} + 2e—$ $E^o = +0.76$ V
$Cu \; Cu^{+2} + 2e—$ $E^o = – 0.34$ V
A) $Cu + Zn^{+2} \; Cu^{+2} + Zn$ C) $Cu^{+2} + Zn \; Cu + Zn^{+2}$
B) $Cu^{+2} + Zn^{+2} \; Cu + Zn$ D) $Cu^{+2} + Zn^{+2} \; Cu + Zn^{+2}$
Cl + Cl Cl Cl + Cl Cl Cl
Cl + Cl Cl + Cl Cl + Cl Cl + Cl

Q.100 Keeping in mind the electrode potential, which one of the following reactions is feasible?

A) $Zn^{+2} + Cu \quad Cu^{+2} + Zn$ C) $Fe + CuSO_4 \quad FeSO_4 + Cu$

B) $Zn + MgSO_4 \quad ZnSO_4 + Mg$ D) $Cd + MgSO_4 \quad CdSO_4 + Mg$

Q.101 What is the correct relation between pH and pK?

A) $pH = pKa + \log[\frac{\text{Acid}}{\text{Base}}]$

C) $pH = pKa - \log[\frac{\text{Base}}{\text{Acid}}]$

B) $pH = pKa - \log[\frac{\text{Acid}}{\text{Base}}]$

] D) pH = pKa + log[
Base
Acid
]

Q.102 Which one of the following is the correct presentation for Ksp?

AgCl Ag+ + Cl—

A) Ksp =
[AgCl]
[Ag+1] [Cl-1]

C) Ksp =
[Ag+1] [Cl-1]
[AgCl]

B) Ksp = [Ag+1] [Cl-1] D) Ksp =
[AgCl]

ANSWER .

92.B
4 C 93 D
48A 94 C
9 C 95 C
50 B 96 D
51 B 97 A
52 A 98 B
53 D 99 C
54 C 100 C
55 D 101 B
56 D 102 B
57 A 103 B
58 B

59 B

61 D

62 B

63 D

64 B

65 C

66 D

67 A 68 B

69 D

70 C

71 B

72 A

73 C

74 D

75 B
76 A
77 A
78 B
79 D
80 D
81 A
82 C
83 D
84 A
85 C
86 D
87 B
88 C
89 A
44 A 90 C
45 A 91 A

CHMEISTRY TO BE CONT.....

Q.61 Which type of bonding is present in NH4Cl?

A) Ionic. C) Coordinate covalent.
B) Covalent. D) All of these.

Q.62 When CuSO4 is electrolyzed in aqueous solution using copper electrodes, then the substance which deposits at the cathode is:

A) Copper metal. C) Hydrogen.
B) Copper ions. D) Oxygen.

Q.63 Aldehydes can be synthesized by the oxidation of

A) Primary alcohols. C) Organic acids.

B) Secondary alcohols. D) Inorganic acids.

Q.64 The products of the fermentation of a sugar are ethanol and

A) Water. C) Carbon dioxide.

B) Oxygen. D) Sulfur dioxide.

Q.65 _____ serve as carriers of heredity from one generation to the other.

A) Lipids. C) Formaldehydes.

B) Caseins. D) Nucleoproteins.

Q.66 _____ extraction is controlled by partition law.

A) Iodine. C) Solvent.

B) Benzoic acid. D) Stationery.

Q.67 The process of effusion is best understood by _____ law.

A) Graham's. C) Boyle's.

B) Charles's. D) None of these.

Q.68 _____ has dipole moment.

A) CO. C) Benzene.

B) CO2. D) All of these.

Q.69 _____ is used as catalyst in Haber's process for NH3 gas manufacture.

A) Iron. C) Copper.

B) Carbon. D) Silver.

Q.70 In many of its properties _____ is quite different from the other alkali metals.

A) Li. C) Na.

B) Be. D) K.

Q.71 Which element forms long chains alternating with oxygen?

A) Carbon. C) Nitrogen.

B) Silicon. D) All of these.

Q.72 The percentage of carbon in medium carbon steel is

A) 0.7-1.5. C) 0.2-0.7.

B) 0.1-0.2. D) 1.6-2.00.

Q.73 Name the rare halogen among the following.

A) F. C) I.

B) Cl. D) At.

Q.74 Which bond will break when electrophile attacks an alcohol?

A) O – H. C) Both A and B.

B) C – O. D) None of these.

Q.75 The extent of un-saturation in a fat is expressed as its

A) Acid number. C) Saponification number.
B) Iodine number. D) None of these.

Q.76 The process of filtration is used to separate _____ particles from liquids.

A) Radial. C) Insoluble.
B) Angular. D) Soluble.

Q.77 London forces are very significant in _____

A) Sulphur. C) Argon.
B) Phosphorous. D) Sugar.

Q.78 Which of the following formation is endothermic reaction?

A) $2H_2(g) + O_2(g)$ $2H_2O(l)$. C) $N_2(g) + O_2(g)$ $N_2O_2(g)$.
B) $C(s) + O_2(g)$ $CO_2(g)$. D) None of these.

Q.79 Name the partially miscible liquids from the following?

A) Alcohol-ether. C) Benzene-water.

B) Nicotine-water. D) Both A and B.

Q.80 AlI3 (Aluminium Iodide) is electrically a _____

A) Conductor. C) Semiconductor.

B) Non-conductor. D) None of these.

Q.81 The elements of IIIA to VIIIA subgroups except He are known as _____ block elements.

A) q. C) p.

B) s. D) None of these.

Q.82 Concentrated nitric acid gives _____ when it reacts with tin.

A) Nitric oxide. C) Ammonium nitrite.

B) Meta stannic acid. D) None of these.

Q.83 Sulphuric acid is used to manufacture

A) HCl and HNO3. C) Both A and B.
B) H3PO4. D) Both HCl and 2COOH.

Q.84 Alkanes containing _____ carbon atoms are waxy solids.

A) up to 4. C) 18 or more.
B) 5 to 17. D) None of these.

Q.85 Which of the following is used to make chloral hydrate?

A) Acetaldehyde. C) None of these.
B) Formaldehyde. D) Both A and B.

Q.86 Ten moles of hydrogen are allowed to react with 6 moles of oxygen. How much water will be

obtained from reaction on complete consumption of one gas?

A) 10 moles. C) 6 moles.

B) 8 moles. D) 4 moles.

Q.87 The highest temperature a substance can exist as _____ is called its critical temperature.

A) Solid. C) Gas.

B) Liquid. D) Isotope.

Q.88 _____ hybridization leads to a regular tetrahedral structure.

A) sp3. C) sp.

B) sp2. D) All of these.

Q.89 Osmotic pressure of a solution is _____ property.

A) Obligative. C) Colligative.
B) Fractional. D) Automated.

Q.90 Magnesium reacts with hydrogen at high pressure in the presence of catalyst

_____

forming magnesium hydride.

A) Dolomite. C) Mg3N2.
B) MgI2. D) Epsom salt.

Q.91 Which element has the largest number of allotropic forms?

A) Phosphorous. C) Oxygen.
B) Sulphur. D) Both A & C.

Q.92 With increase in number of unpaired electrons, paramagnetism:

A) Increases. C) Remains constant.

B) Decreases. D) Decreases then increases.

Q.93 Which metal is commonly used to remove air bubbles from molten metals?

A) Aluminium. C) Sodium.

B) Copper. D) Calcium.

Q.94 Which of the following bonds has minimum bond energy?

A) C – F. C) C – I.

B) C – Cl. D) C – Br.

Q.95 Which of the following does not react with water?

A) Li. C) Mg

B) Na. D) Be.

Q.96 $Al_2O_3(SiO_2).2H_2O$ is called

A) Clay. C) Asbestos.

B) Talc. D) None of these.

Q.97 CaO forms fertilize slag by reacting with

A) P_2O_5. C) Silica.

B) Fe_2O_3. D) FO.

Q.98 _____ is colorless volatile liquid at room temperature.

A) HCl. C) HI.

B) HF. D) HBr.

Q.99 Hydrogen passed through phenol at 150 ºC in the presence of _____ catalyst gives cyclohexanol.

A) Tin. C) Iron.

B) Nickel. D) Sodium.

Q.100 Ethanol-water is _____ mixture.

A) Azeotropic. C) Benedict's.

B) Ideal. D) Aliphatic.

Q.101 The mobile phase in paper chromatography is usually

A) An organic liquid. C) Water.

B) Sulphuric acid. D) Silver nitrate.

Q.102 The amount of heat absorbed by one mole of solid at 1 atm when it melts into liquid form is

denoted by _____

A) Δ Hv. C) Δ Hi.

B) Δ Hf. D) Δ Hs.

Q.103 In synthetic fibres _____ bonding is responsible for tensile strength.

A) Nitrogen. C) Oxygen.

B) Hydrogen. D) None of these.

Q.104 Boiling point of HF is _____ H2O.

A) Lower than. C) Equal to.
B) Higher than. D) Almost same as.

Q.105 _____ is necessary for development of leaves and it tends to accumulate in leaves and bark.

A) NO2. C) Gypsum.
B) Calcium. D) Nitrogen.

Q.106 Which of the following is pale yellow to reddish yellow in color?

A) Pb2O. C) PbO.
B) PbO2. D) 2PbCO3.Pb(OH)2.

Q.107 In which of the following carbon is double bonded with itself?

A) Alkane. C) Alkene.
B) Ether. D) Alkyne.

Q.108 In this process, higher hydrocarbons can be cracked at lower temperature and lower pressure.

A) Thermal cracking. C) Steam cracking.

B) Catalytic cracking. D) Reforming.

Q.109 Acetic acid is called _____ acid.

A) Methanoic. C) Ethanoic.

B) Propanoic. D) Butanoic.

Q.110 Na may be denoted by _____ electron configuration notation

A) 1s2 2s1. C) [Ne] 3s1.

B) [Ar] 4s1. D) None of these.

Q.111 Which is the best drying agent in desiccators?

A) KOH. C) CaCl2.
B) Gypsum. D) Silica sand.

Q.112 100 m3 of a gas at 3 atm pressure and 27 oC is transferred to a chamber of 300 m3 volume maintained at a temperature of 327 oC. What will be the pressure in chamber?

A) 6 atm. C) 2 atm.
B) 4 atm. D) 1 atm.

Q.113 The crystals of _____ are ionic solids.

A) Sugar. C) Diamond.
B) Iron. D) NaCl.

Q.114 Which material possesses the highest pH?

A) Soft drinks. C) Milk of magnesia.
B) Bananas. D) Sea water.

Q.115 The electron present in a particular orbit _____ energy.

A) Releases. C) Absorbs.

B) Does not radiate. D) None of these.

Q.116 Al2F2SiO4 is named as

A) Gibbsite. C) Bauxite.

B) Emerald. D) Cryolite.

Q.117 Name the oxide in which N has the highest oxidation number.

A) Nitrous oxide. C) Nitrogen peroxide.

B) Nitric oxide. D) Nitrous anhydride.

Q.118 Sulphur has oxidation state of _____

A) ± 2. C) None of these.

B) + 4 and +6. D) Both A and B.

Q.119 CH3-O-CH3 is example of _____ isomerism.

A) Metamerism. C) Chain.

B) Functional group. D) Position.

Q.120 _____ are product of reaction of an alcohol and aromatic bi-functional acids.

A) Acrylic resins. C) PVCs.

B) Polyester resins. D) Polyamide resins.

ANSWER:

46 D **92** A
47 C **93** A
48 A **94** C

49 B **95 X**

50 C **96** A

51 D **97** C

52 B **98** B

53 B **99** B

54 B **100** A

55 C **101** A

56 B **102** B

57 A **103** D

58 A **104** B
59 B **105** B

60 B **106** C

61 C **107** C

62 A **108** B

63 A **109** C

64 C **110** C
65 D **111** C

66 C **112** C

67 A **113** D

68 A **114** C

69 A **115** B

24 A **70** A **116** B

25 D **71** D **117** D

26 D **72** C **118** D

27 D **73** D **119** B

28 B **74** A **120** B

29 D **75** B
30 A **76** C
31 C **77** C
32 B **78** C
33 A **79** B
34 C **80** B
35 B **81** C
36 A **82** C
37 C **83** D
38 B **84** C
39 D **85** A
40 D **86** A
41 D **87** B
42 D **88** A
43 A **89** C
44 C **90** B

//

NUMS PAST PAPERS 2014 – 2018.

//

THE END