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PROVISIONAL ANSWER KEY [CBRT]

Name of The Post	Assistant Professor, Pharmacology, General State Service, Class-1
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Instructions / સૂચના

Candidate must ensure compliance to the instructions mentioned below, else objections shall not be considered: -

- (1) All the suggestion should be submitted in prescribed format of suggestion sheet Physically.
- (2) Question wise suggestion to be submitted in the prescribed format (Suggestion Sheet) published on the website.
- (3) All suggestions are to be submitted with reference to the Master Question Paper with provisional answer key (Master Question Paper), published herewith on the website. Objections should be sent referring to the Question, Question No. & options of the Master Question Paper.
- (4) Suggestions regarding question nos. and options other than provisional answer key (Master Question Paper) shall not be considered.
- (5) Objections and answers suggested by the candidate should be in compliance with the responses given by him in his answer sheet. Objections shall not be considered, in case, if responses given in the answer sheet /response sheet and submitted suggestions are differed.
- (6) Objection for each question shall be made on separate sheet. Objection for more than one question in single sheet shall not be considered & treated as cancelled.

ઉમેદવારે નીચેની સૂચનાઓનું પાલન કરવાની તકેદારી રાખવી, અન્યથા વાંધા-સૂચન અંગે કરેલ રજૂઆતો ધ્યાને લેવાશે નહીં

- (1) ઉમેદવારે વાંધા-સૂચનો નિયત કરવામાં આવેલ વાંધા-સૂચન પત્રકથી રજૂ કરવાના રહેશે.
- (2) ઉમેદવારે પ્રશ્નપ્રમાણે વાંધા-સૂચનો રજૂ કરવા વેબસાઈટ પર પ્રસિધ્ધ થયેલ નિયત વાંધા-સૂચન પત્રકના નમૂનાનો જ ઉપયોગ કરવો.
- (3) ઉમેદવારે પોતાને પરીક્ષામાં મળેલ પ્રશ્નપુસ્તિકામાં છપાયેલ પ્રશ્નક્રમાંક મુજબ વાંધા-સૂચનો રજૂ ન કરતા તમામ વાંધા-સૂચનો વેબસાઈટ પર પ્રસિધ્ધ થયેલ પ્રોવિઝનલ આન્સર કી (માસ્ટર પ્રશ્નપત્ર)ના પ્રશ્ન ક્રમાંક મુજબ અને તે સંદર્ભમાં રજૂ કરવા.
- (4) માસ્ટર પ્રશ્નપત્ર માં નિર્દિષ્ટ પ્રશ્ન અને વિકલ્પ સિવાયના વાંધા-સૂચન ધ્યાને લેવામાં આવશે નહીં.
- (5) ઉમેદવારે જે પ્રશ્નના વિકલ્પ પર વાંધો રજૂ કરેલ છે અને વિકલ્પ રૂપે જે જવાબ સૂચવેલ છે એ જવાબ ઉમેદવારે પોતાની ઉત્તરવહીમાં આપેલ હોવો જોઈએ. ઉમેદવારે સૂચવેલ જવાબ અને ઉત્તરવહીની જવાબ ભિન્ન હશે તો ઉમેદવારે રજૂ કરેલ વાંધા-સૂચન ધ્યાનમાં લેવાશે નહીં.
- (6) એક પ્રશ્ન માટે એક જ વાંધા-સૂચન પત્રક વાપરવું. એક જ વાંધા-સૂચન પત્રકમાં એકથી વધારે પ્રશ્નોની રજૂઆત કરેલ હશે તો તે અંગેના વાંધા-સૂચનો ધ્યાને લેવાશે નહીં.

001. The Nobel prize for recognising the importance of Nitric oxide as a signalling molecule in the cardiovascular system and elsewhere was awarded to
(A) Robert Furchgott (B) Louis Ignarro
(C) Ferid Murad (D) All of the above
002. Which of the following could be the statistical solution to non-compliance and missing outcomes in a randomized control trial?
(A) Prospective analysis (B) Retrospective analysis
(C) Intention-to-treat analysis (D) All of the above
003. Sample for measurement of concentration of digoxin should be taken _____ hrs after the last dose:
(A) 4 hrs (B) 5 hrs
(C) 6 hrs (D) 7 hrs
004. Decrease in cyclic AMP is caused by:
(A) Alpha 1 receptors (B) Muscarinic 2 receptors
(C) Beta 2 receptors (D) Dopamine 1 receptors
005. Which of the following drugs is not from a natural source?
(A) Phenytoin (B) Digitalis
(C) Morphine (D) Quinine
006. Which of the following is a nonparametric test used to compare three or more samples?
(A) Mann-Whitney U test (B) ANOVA
(C) Kruskal-Wallis test (D) Wilcoxon Signed Rank test
007. A drug 'R' producing no response by itself causes the log dose-response curve of another drug 'S' to shift to the right in a parallel manner without decreasing the maximal response: Drug 'R' is a:
(A) Partial agonist (B) Inverse agonist
(C) Competitive antagonist (D) Non-competitive antagonist
008. Which of the following may be checked for evaluation of a patient reported outcome instrument?
(A) Validity (B) Reliability
(C) Ability to detect change (D) All of the above
009. Leukaemia is seen with chronic exposure to
(A) Benzene (B) Xylene
(C) Toluene (D) All of the above
010. Which of the following is not a diet-induced animal model of obesity?
(A) Zucker rat (B) Cafeteria diet-induced obesity
(C) New Zealand obese mouse (D) Age-related obesity in mice
011. As per the World Medical association, which of the following is called as the "Modern Hippocratic Oath"?
(A) Declaration of Geneva (B) Declaration of Helsinki
(C) Declaration of Tokyo (D) Declaration of Taipei
012. True statement about Data Safety Monitoring Board (DSMB) is:
(A) Reviews the accumulated research data from an ongoing trial
(B) Responsible for implementation of quality assurance and quality control
(C) To retain all the essential documents pertaining to the trial
(D) To sign study documents including clinical trial agreement

013. All of the following agents are used in glaucoma treatment, except:
 (A) Dorzolamide (B) Pilocarpine
 (C) Metoprolol (D) Timolol
014. Abacavir induced hypersensitivity syndrome is predicted by genotyping for:
 (A) HLA-B*1502 (B) HLA-B38
 (C) HLA-A*31:01 (D) HLA-B*5701
015. Drug screening methods for analgesic agents in animals using chemical stimulus is:
 (A) Tooth pulp test (B) Writhing test
 (C) Hot plate method (D) Tail flick test
016. Which one of the following drugs acts by inhibition of fungal squalene epoxidase?
 (A) Terbinafine (B) Griseofulvin
 (C) Voriconazole (D) Caspofungin
017. Which of the following International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) guidelines is about Good Clinical Practice (GCP)?
 (A) E 6 (B) E 7
 (C) E 8 (D) E 9
018. Ipilimumab is approved for treatment of:
 (A) Metastatic melanoma (B) Breast cancer
 (C) Hepatocellular carcinoma (D) Non small cell lung cancer
019. Octreotide is not indicated in the treatment of which one of the following conditions?
 (A) Gall stones
 (B) Secretory diarrhoea associated with carcinoid tumors
 (C) Acromegaly
 (D) Gastrointestinal bleeding
020. Phosphodiesterase 4 inhibitor which is effective in treating moderate to severe plaque psoriasis:
 (A) Rolipram (B) Crisaborole
 (C) Roflumilast (D) Apremilast
021. Which among the following is a false statement?
 (A) Valganciclovir is the prodrug of ganciclovir
 (B) Valacyclovir is the prodrug of acyclovir
 (C) Famciclovir is the prodrug of 6-deoxy penciclovir
 (D) Adefovir is a prodrug of Adefovir dipivoxil
022. Which of the following agent binds to GABA A receptor chloride channel complex?
 (A) Bupropion (B) Trazodone
 (C) Buspirone (D) Zolpidem
023. Which of the following is not a treatment option in the 'Solidarity' Clinical trial for COVID-19 treatments?
 (A) Hydroxychloroquine (B) Lopinavir/Ritonavir
 (C) Lopinavir/Indinavir (D) Remdesivir
024. Which of the following drug is a SERM useful for treatment of osteoporosis?
 (A) Bisphosphonate (B) Denosumab
 (C) Raloxifene (D) Estradiol

025. As per the New Drugs and Clinical Trials Rules, 2019, which of the following is false about Academic clinical trial?
- (A) It has been initiated after prior approval by the Ethics Committee.
(B) The observations generated from such clinical trial are not required to be submitted to the Central Licencing Authority.
(C) The observations of such clinical trial are not used for promotional purposes.
(D) Prior permission for conducting the trial shall be required from the Central Licencing Authority.
026. Triptans used in migraine are agonists at which receptor:
- (A) 5HT_{1A} (B) 5HT_{1B/1D}
(C) 5HT₃ (D) 5HT_{2A}
027. Positive predictive value of a diagnostic test is:
- (A) True positives/True positives + False negatives
(B) True positives/True positives + False positives
(C) True positive/True negative + False negative
(D) True positive/True negative + False positives
028. Which one of the following neuromuscular blocking agents, is eliminated by Hofmann degradation and hydrolysis by plasma esterases?
- (A) Doxacurium (B) Rocuronium
(C) Vecuronium (D) Atracurium
029. Which of the following is a type B (unpredictable) adverse drug reaction?
- (A) Toxic effect (B) Side effect
(C) Idiosyncrasy (D) drug withdrawal effects
030. t_{1/2} of Acitretin is about:
- (A) 10-20 hours (B) 80-160 days
(C) 50 hours (D) 7-9 hours
031. The signature microRNA in atherosclerosis is
- (A) miR-122 (B) miR-208
(C) miR-21 (D) miR-33
032. Mechanism of action of donepezil is:
- (A) Irreversible cholinergic action
(B) Centrally acting irreversible anticholinesterase
(C) Centrally acting reversible anticholinesterase
(D) Reversible anticholinesterase
033. Reslizumab is approved by FDA in 2016 for:
- (A) Rheumatoid arthritis (B) Multiple sclerosis
(C) Inflammatory bowel disease (D) Severe Asthma
034. Identify pesticide from botanical sources
- (A) Pyrethrum (B) Nicotine
(C) Rotenone (D) All of the above

035. According to ICH-GCP are the most important considerations and should prevail over interests of science and society:
- (A) The wishes of the trial subjects
 - (B) The therapeutic area need for new treatments
 - (C) The rights, safety, and well being of the trial subjects
 - (D) The sponsor's reasons for conducting the study
036. Hydrolysis reaction are involved with the metabolism of following drugs, except
- (A) Diazepam
 - (B) Procaine
 - (C) Carbamazepine
 - (D) Indomethacin
037. The rate limiting enzyme in the synthesis of catecholamines is:
- (A) Tyrosine hydroxylase
 - (B) Dopa decarboxylase
 - (C) Dopamine β -hydroxylase
 - (D) Noradrenaline N-methyl transferase
038. All of the following statements about flumazenil are true except?
- (A) It is a competitive antagonist of benzodiazepines
 - (B) It may be used to treat barbiturate poisoning
 - (C) It is given intravenously
 - (D) It acts on same site on GABA channel where benzodiazepines bind
039. The decision to grant the permission to conduct clinical trial for a new drug or investigational new drug shall be taken within days by Central Licensing Authority.
- (A) 60 working days
 - (B) 90 working days
 - (C) 120 working days
 - (D) 150 working days
040. Which of the following drug is topoisomerase 1 inhibitor?
- (A) Doxorubicin
 - (B) Vincristine
 - (C) Irinotecan
 - (D) Etoposide
041. If the variance is 16 then standard deviation is:
- (A) 4
 - (B) 32
 - (C) 256
 - (D) 8
042. The duration of action of Cephalosporins is longer in neonates than in adults because
- (A) Intestinal transit is fast.
 - (B) Drug metabolizing enzymes are overactive.
 - (C) Tubular transport mechanisms are not well developed.
 - (D) Glomerular filtration rate is high.
043. All of the statements about exenatide are true except:
- (A) It is a GLP -1 receptor agonist
 - (B) It can be used for treatment of Type 1 diabetes mellitus
 - (C) It is given subcutaneously
 - (D) It decreases glucagon
044. Lung ventilator comes under which class of medical devices?
- (A) Class A (low risk)
 - (B) Class B (low-moderate risk)
 - (C) Class C (moderate-high risk)
 - (D) Class D (high risk)

045. All of the following are endpoints for cancer clinical trials except
 (A) Overall Survival (B) Disease-Free Survival
 (C) Objective Response Rate (D) Incomplete response
046. Anti histaminic used in motion sickness is:
 (A) Cetirizine (B) Loratadine
 (C) Dimenhydrinate (D) Hydroxyzine
047. Which one of the following drugs functions as a Selective Progesterone Receptor Modulator (SPRM)?
 (A) Exemestane (B) Ulipristal
 (C) Onapristone (D) Fulvestrant
048. G-protein coupled receptors is not a target of which one of the following drugs?
 (A) Monteleukast (B) Misoprostol
 (C) Atropine (D) Lidocaine
049. All of the following experimental models are generally selected to investigate the anti-inflammatory activity of a chemical compound except
 (A) Rat paw edema (B) Writhing Induced by Aconitine
 (C) Granuloma pouch (D) Adjuvant-Induced Arthritis
050. Which of the following antibacterial can cause serotonin syndrome when given along with SSRIs?
 (A) Clindamycin (B) Linezolid
 (C) Daptomycin (D) Vancomycin
051. Alprostadil is not used for:
 (A) Erectile dysfunction (B) Pulmonary hypertension
 (C) Closure of Patent ductus arteriosus (D) Impotence
052. Which of the following is not a validated surrogate endpoint in clinical trials?
 (A) Systolic blood pressure (B) Forced vital capacity
 (C) Low density lipoprotein cholesterol (D) Human immunodeficiency virus viral load
053. All of the following anticancer agents cause bone marrow suppression except:
 (A) Daunorubicin (B) Mitomycin
 (C) L-Asparaginase (D) Paclitaxel
054. Guidelines for reporting systematic reviews and meta analysis:
 (A) STROBE (B) PRISMA
 (C) CONSORT (D) MOOSE
055. Which of the following pharmacoeconomic analysis compares interventions with similar outcomes and determines the optimal strategy based on costs?
 (A) Cost minimization analysis (B) Cost effectiveness analysis
 (C) Cost benefit analysis (D) Cost utilization analysis
056. All of the following may be used for detoxification therapy of chronic alcoholism except:
 (A) Riluzole (B) Disulfiram
 (C) Naltrexone (D) Acamprosate
057. Which of the following has less than 5 % renal excretion of parent drug?
 (A) Lamivudine (B) Abacavir
 (C) Tenofovir (D) Emtricitabine

058. In case of serious adverse event of death the investigator shall forward their reports to the Central Licensing Authority and the head of the institution within days of the knowledge of occurrence of event.
- (A) 10 days (B) 12 days
 (C) 14 days (D) 16 days
059. Loading dose of a drug primarily depends on
- (A) Clearance (B) Volume of distribution
 (C) Half life (D) All of the above
060. Nude mouse is:
- (A) Lacks natural killer cells (B) Lacks thymus
 (C) deficient in neutrophils (D) None of the above
061. Which compounds can be used as external photoswitches to control off-target site drug activity in photopharmacology are:
- (A) Azobenzene (B) Bromobenzene
 (C) Chlorobenzene (D) Toluene
062. Which of the following foetal malformations is caused by carbamazepine?
- (A) Cardiac abnormalities (B) Neural tube defects
 (C) Hypothyroidism (D) Growth retardation
063. Which of the following is used in management of cisplatin - induced nephrotoxicity?
- (A) Pre-treatment hydration (B) Chloride diuresis
 (C) Amifostine (D) All of the above
064. Sample size estimation in clinical trial generally requires all except:
- (A) Acceptable level of significance (B) Expected effect size
 (C) Power of the study (D) Duration of treatment
065. Nimodipine is used in
- (A) Sub-arachnoid haemorrhage (B) Extra-dural haemorrhage
 (C) Sub-dural haemorrhage (D) Intra-cerebral haemorrhage
066. Therapeutic serum concentration of lithium in bipolar depression is:
- (A) 60-100 µg/mL (B) 6-12 µg/mL
 (C) 0.6-1.0 mEq/L (D) 2-4 mEq/L
067. Hyperammonemia is frequently associated with the use of:
- (A) Valproic acid (B) Topiramate
 (C) Vigabatrin (D) Phenytoin
068. The drug found to be beneficial in amyotrophic lateral sclerosis is:
- (A) Rasagiline (B) Edaravone
 (C) Rotigotine (D) Tetrabenazine
069. The timelines for submitting periodic safety update reports:
- (A) Every 3 months for the first two years; subsequent 2 years annually
 (B) Every 6 months for the first three years; subsequent year annually
 (C) Every 6 months for the first year; subsequent 3 years annually
 (D) Every 6 months for the first two years; subsequent 2 years annually

070. About first order kinetics all are true except:
(A) Rate of elimination is directly proportional to the drug concentration
(B) Constant fraction of the drug is eliminated in unit time
(C) Clearance of the drug remains constant
 (D) Half life gets prolonged with dose
071. The monobactam Aztreonam is effective against:
(A) Gram positive bacteria (B) Anaerobic organisms
 (C) Gram negative bacteria (D) All of the above
072. The objective of Phase IV trials is:
(A) To determine maximum tolerated dose
(B) To determine drug dosage
(C) To determine pharmacokinetics
 (D) To provide additional details about the medicines efficacy or safety profile
073. Which test is used to detect a particular RNA in a mixture of RNAs?
(A) Southern blot (B) Northern blot
(C) Western blot (D) None of the above
074. Therapeutic uses of muscarinic receptor antagonists do not include:
(A) Treatment of COPD
(B) Treatment of Parkinsonism
 (C) Treatment of postoperative urinary retention
(D) Prevention of motion sickness
075. Steady state plasma concentration depends on
(A) Bioavailability (B) Volume of distribution
(C) Clearance (D) All of the above
076. True statement about drugs used in Parkinsonism is:
(A) Amantadine is a cholinergic drug
(B) Apomorphine is a dopamine antagonist
(C) Benserazide is the centrally acting inhibitor of aromatic L-amino acid decarboxylase
 (D) COMT inhibitors prolong the action of L-dopa
077. According to the Biopharmaceutics Classification System, Class I drug substances have
 (A) High solubility and high permeability (B) Low solubility and high permeability
(C) High solubility and low permeability (D) Low solubility and low permeability
078. Which of the following is a component of slow reacting substance of anaphylaxis (SRS-A)?
(A) PGE₂ (B) PGF₂
 (C) LTC₄ (D) LTE₄
079. The total of number of medicines in National list of essential medicines (NLEM) 2015:
(A) 348 (B) 354
 (C) 376 (D) 414
080. As per the New Drugs and Clinical Trials Rules, 2019, how many minimum members are required to constitute an ethics committee?
(A) Six (B) Seven
(C) Eight (D) Nine

081. Which of the following statements is false about Aliskiren?
 (A) It is a potent competitive inhibitor of renin.
 (B) It has high oral bioavailability.
 (C) It does not interact with drugs that interact with CYPs.
 (D) It is a low-molecular-weight non-peptide.
082. Streptogramins are not effective against:
 (A) Mycoplasma (B) Klebsiella
 (C) Legionella (D) Staph aureus
083. Which of the following is a nanoparticle?
 (A) Eltrombopag (B) Ferumoxytol
 (C) Tofacitinib (D) Bleomycin
084. In India, The National Guidelines for Gene Therapy Product Development and Clinical Trials were introduced in the year
 (A) 2012 (B) 2014
 (C) 2016 (D) 2019
085. Anticoagulant effect of warfarin is affected by the polymorphism in the gene
 (A) CYP2D6 (B) CYP2C9
 (C) CYP2C19 (D) CYP2B7
086. Renal stones are seen as a complication by using the following drug:
 (A) Tiagabine (B) Vigabatrine
 (C) Lamotrigine (D) Zonisamide
087. Which of the following drug(s) can be used for prophylaxis in areas with chloroquine-sensitive malaria?
 (A) Chloroquine phosphate (B) Hydroxychloroquine sulfate
 (C) Doxycycline (D) All of the above
088. What is meant by a “run-in period” for a clinical trial?
 (A) During which subjects are screened and assigned to different treatment groups before first dose is taken
 (B) During which subjects receive their medication packages, in contrast to run-out period, which refers to when they run-out of medications
 (C) The same thing as a “wash-out period”
 (D) A period prior to randomization during which potential subjects who have met all entry criteria are assigned the same regimen either the control or experimental treatment
089. Antihelminthic also acting as immunomodulator is:
 (A) Ivermectin (B) Levamisole
 (C) Praziquantel (D) Mebendazole
090. Which of the following fluoroquinolone should not be used in hepatic failure?
 (A) Ofloxacin (B) Ciprofloxacin
 (C) Levofloxacin (D) Moxifloxacin
091. The fraction of bioavailability of a drug given through subcutaneous route is
 (A) Equal to 1 (B) Greater than 0.75 but less than 1
 (C) Greater than 0.05 but less than 1 (D) Greater than 0.50 but less than 1

092. Which of the following statements is false about Rifaximin?
 (A) It is a derivative of rifampin.
 (B) It is not active against Gram-negative aerobes.
 (C) Rifaximin inhibits bacterial protein synthesis by binding to the beta subunit of DNA-dependent RNA polymerase.
 (D) When administered orally, systemic absorption is < 0.5%.
093. As per the CPCSEA guidelines, which of the following is an acceptable technique for euthanasia of guinea pigs?
 (A) Electrocution (B) Exsanguination
 (C) Decapitation (D) Cervical dislocation
094. Which of the following anti fungal drug inhibit 1, 3-β-d-glucan synthesis?
 (A) Terbinafine (B) Voriconazole
 (C) Caspofungin (D) Griseofulvin
095. What is the formula for parenteral Iron therapy?
 (A) $4.1 \times \text{body weight (kg)} \times \text{Hb deficit (g/dl)}$
 (B) $4.2 \times \text{body weight (kg)} \times \text{Hb deficit (g/dl)}$
 (C) $4.3 \times \text{body weight (kg)} \times \text{Hb deficit (g/dl)}$
 (D) $4.4 \times \text{body weight (kg)} \times \text{Hb deficit (g/dl)}$
096. True regarding cross-over clinical trial design except:
 (A) Less number of patients required (B) Not possible for drugs with longer half-lives
 (C) Can be possible in acute illness (D) Difficult to perform
097. CaNa_2 EDTA (calcium disodium ethylenediaminetetraacetic acid) is used in:
 (A) Acute lead poisoning (B) Acute arsenic poisoning
 (C) Acute mercury poisoning (D) All of the above
098. Cardiac arrhythmias occurring as a side effect of theophylline are due to
 (A) PDE 4 inhibition (B) PDE 3 inhibition
 (C) Adenosine receptor antagonism (D) Both (B) and (C)
099. U shaped dose response curve is seen in:
 (A) Essential metals (B) Steroids
 (C) Formaldehyde (D) Digoxin
100. All are the drugs used drug-eluting endovascular stents except
 (A) Rapamycin (B) Paclitaxel
 (C) Zotarolimus (D) Ivabradine
101. Which of the following is/are a synthetic copy of snail toxin?
 (A) Zafirlukast (B) Zileuton
 (C) Ziconotide (D) All of the above
102. Which of the following is a factor which decreases false negativity?
 (A) Large sample size (B) Large effect size
 (C) High significance (D) All of the above
103. Drugs with high plasma protein binding have:
 (A) Short duration of action (B) Less drug interactions
 (C) Smaller volume of distribution (D) All of the above

104. Bedaquiline an antitubercular drug acts by:
- (A) Inhibiting proton pump activity of ATP synthase
 - (B) Inhibits DNA gyrase
 - (C) Inhibits mycolic acid synthesis
 - (D) Binds to DNA dependent RNA polymerase
105. How much is the base amount (B) in formula for compensation $(B \times F \times R) / 99.37$ for clinical trial related death:
- Where B = Base amount
 F = Factor depending on the age of the trial subject
 R = Risk Factor depending on the seriousness and severity of the disease
- (A) 5 lacs
 - (C) 8 lacs
 - (B) 7 lacs
 - (D) 10 lacs
106. Moclobemide is:
- (A) SSRI
 - (C) MAO inhibitor
 - (B) Antipsychotic drug
 - (D) Tricyclic antidepressant
107. All of these are the adverse effects of naloxone in the treatment of opioid poisoning except:
- (A) Hypertension
 - (C) Seizures
 - (B) Pulmonary edema
 - (D) Ventricular arrhythmias
108. As per the WHO-UMC system for standardised case causality assessment, which of the following is not an assessment criterion for a suspected adverse drug reaction termed as “Probable / Likely”?
- (A) Event or laboratory test abnormality, with reasonable time relationship to drug intake.
 - (B) Unlikely to be attributed to disease or other drugs.
 - (C) Response to withdrawal clinically reasonable.
 - (D) Rechallenge required.
109. Which of the following is an immunomodulator used exclusively in the treatment of relapsing-remitting multiple sclerosis?
- (A) Fingolimod hydrochloride
 - (C) Methotrexate
 - (B) Hydroxychloroquine
 - (D) Cytarabine
110. The criteria to evaluate rational prescribing are all except
- (A) Appropriate indication
 - (C) Correct dispensing
 - (B) Appropriate drug
 - (D) Knowledge of the prescriber
111. Which is a selective T-cell costimulation blocker?
- (A) Abatacept
 - (C) Alefacept
 - (B) Belatacept
 - (D) Rilonacept
112. Which of the following drug is a parenteral reversible inhibitor of P2Y₁₂ receptor?
- (A) Clopidogrel
 - (C) Prasugrel
 - (B) Cangrelor
 - (D) Ticagrelor
113. The most commonly used positive control in thorough QT studies during drug development is
- (A) Cisapride
 - (C) Astemizole
 - (B) Moxifloxacin
 - (D) Droperidol

114. According to JNC 8 guidelines which of the following are preferred for initial treatment in general non-black population except:
 (A) β blockers (B) Thiazide diuretics
 (C) ACE inhibitors (D) Angiotensin receptor blockers
115. Which of the following drugs does not act by regulating gene expression?
 (A) Fluticasone (B) Pioglitazone
 (C) Tazarotene (D) Oxytocin
116. Total dose of levonorgestrel for emergency contraception:
 (A) 0.75 mg single pill (B) 1.5 mg one pill
 (C) 1.5 mg two pills (D) 1 mg two pills
117. Type II type of Amiodarone-Induced Thyrotoxicosis occurs in patients with
 (A) Multinodular goitre (B) Graves' disease
 (C) Inflammatory thyroiditis (D) All of the above
118. Which of the following vaccine is live attenuated?
 (A) Hepatitis A (B) Rabies
 (C) Rotavirus (D) Tetanus
119. Which of the following statement(s) regarding Ceftaroline is true?
 (A) It is not active against extended spectrum β -lactamase-producing organisms.
 (B) It is primarily excreted through faeces.
 (C) Active against Methicillin- Resistant Staphylococci.
 (D) All of the above
120. According to NACO guidelines 2018 the preferred first line regimen for treatment naive adults with HIV 1 infection is:
 (A) Zidovudine+Lamivudine+Efavirenz (B) Tenofovir+Lamivudine+Efavirenz
 (C) Tenofovir+Lamivudine+Nevirapine (D) Abacavir+Lamivudine+Efavirenz
121. What is the advantage of three dimensional printed drugs?
 (A) Increase in ionization (B) Increase in solubility
 (C) Increase in tissue permeability (D) Decrease in clearance
122. Hemodialysis is not indicated for toxicity of:
 (A) Lithium (B) Salicylate
 (C) Digoxin (D) Ethylene glycol
123. According to empirical rule, approximately what percent of the data should lie within Mean \pm 2 Standard deviation?
 (A) 68% (B) 75%
 (C) 95% (D) 99%
124. The molecules in mass spectrophotometry are separated based on
 (A) Mass (B) Mass to charge ratio
 (C) Charge (D) None of the above
125. In case of clinical trial of anti-HIV and anti-leprosy drugs _____ consent should be taken:
 (A) Audio-video recording (B) Verbal consent
 (C) Audio recording (D) Assent

126. The mechanisms of resistance to methotrexate include all except
 (A) Decreased concentrations of intracellular dihydrofolate reductase.
 (B) Impaired transport of methotrexate into cells.
 (C) Production of altered forms of dihydrofolate reductase.
 (D) Increased expression of a drug efflux transporter of the MRP class.
127. All of the following are true about chi square test except:
 (A) denoted by “ χ^2 ”
 (B) cannot apply if the expected value in any cell is less than 5
 (C) measures the strength of association
 (D) In tables larger than 2×2 , Yates correction cannot be applied
128. About Phase 0: microdosing study all are true except:
 (A) Extremely low nonpharmacologically active doses of a drug are used
 (B) Done in healthy volunteers
 (C) To obtain early human pharmacokinetics
 (D) To determine safety of the drug
129. Which one of the following is capable of producing acute adult respiratory distress syndrome (ARDS)?
 (A) Sulfur dioxide (SO₂) (B) Nitrogen dioxide (NO₂)
 (C) Carbon monoxide (CO) (D) None of the above
130. According to New Drugs and Clinical Trials Rules, 2019 “Orphan drug” means a drug intended to treat a condition which affects:
 (A) Not more than two lakh persons in India (B) Not more than four lakh persons in India
 (C) Not more than five lakh persons in India (D) None of the above
131. Which of the following is not a Chloride secretion activator?
 (A) Lubiprostone (B) Alvimopan
 (C) Linaclotide (D) Plecanatide
132. Methods for separation of medicinally active ingredients from plant include:
 (A) Maceration (B) Percolation
 (C) Soxhlet extraction (D) All of the above
133. Which of the following is an inhibitor of Liver Microsomal Triglyceride Transfer Protein?
 (A) Alirocumab (B) Evolocumab
 (C) Mipomersen (D) Lomitapide
134. Which of the following can be administered both orally and intravenously?
 (A) Doxycycline (B) Minocycline
 (C) Tigecycline (D) Both (A) and (B)
135. Michaelis-Menten elimination is also called as
 (A) Zero order kinetics (B) First order kinetics
 (C) Both (A) and (B) (D) Neither (A) or (B)
136. Verapamil is contraindicated in:
 (A) Grade 2-3 AV block (B) Severe LV dysfunction
 (C) Heart failure (D) All of the above

137. All are prohibited by the World anti-doping agency at all times except
(A) β 2 agonists (B) Diuretics
(C) Anabolic steroids (D) Cannabinoids
138. Fomepizole is used in the treatment of:
(A) Methanol poisoning (B) Ethanol poisoning
(C) Ethylene glycol poisoning (D) (A) and (C)
139. As per the National Ethical Guidelines for Biomedical Research Involving Children, voluntary informed consent for participation in paediatric clinical trials can be waived if:
(A) When the participant and the researcher do not come into contact
(B) When the trial is necessitated in emergency situations
(C) When the trial involves not more than minimal risk
(D) All of the above
140. Correlation co-efficient varies between
(A) 0 to +1 (B) -1 to 0
(C) -1 to +1 (D) +1 to +2
141. The maximum dose at which a specified toxic effect is not seen is called as
(A) Median lethal dose (B) Minimum lethal dose
(C) Minimum lethal dose (D) No-effect dose
142. Non-clinical toxicity testing and safety evaluation data of an Investigational New Drug (IND) needed for the conduct of phase I clinical trials include all, except:
(A) Single dose toxicity studies
(B) Repeat-dose systemic toxicity studies of appropriate duration
(C) Male fertility study
(D) In-vivo genotoxicity tests
143. Coronary steal phenomenon is seen with:
(A) Nitrovasodilators (B) Dipyridamole
(C) Verapamil (D) Propranolol
144. Criteria for applying Unpaired t-test include all except:
(A) Dependant variable should be quantitative, continuous
(B) Dependant variable should be normally distributed
(C) Homogeneity of variance
(D) Applied when two sets of observations for each individual
145. Metrifonate is effective against:
(A) Schistosomiasis (B) Leishmaniasis
(C) Giardiasis (D) Amoebiasis
146. Monoclonal antibody known to cause cardiotoxicity is:
(A) Alemtuzumab (B) Pembrolizumab
(C) Rituximab (D) Trastuzumab
147. Varenicline, which is approved for smoking cessation, acts as a partial agonist at
(A) α 3 β 4 receptor (B) α 4 β 2 receptor
(C) α 6 β 2 receptor (D) All of the above

148. Lorcaserin is a
 (A) 5HT 2a agonist (B) 5HT 2a antagonist
 (C) 5HT 2b agonist (D) 5HT 2c agonist
149. The ratio of lipid-soluble form to water-soluble form for a weak acid or weak base is expressed by
 (A) Michaelis – Menten equation (B) Fick's law
 (C) Noyes Whitney equation (D) Henderson-Hasselbalch equation
150. Which of the following drug is approved for dabigatran toxicity?
 (A) Idarucizumab (B) Andexanet alfa
 (C) Rivaroxaban (D) Argatroban
151. In chromatography, which of the following can the mobile phase be made of:
 (A) Solid or liquid (B) Liquid or gas
 (C) Solid only (D) Liquid only
152. Ames test is done to evaluate
 (A) Carcinogenic potential of a drug (B) Mutagenic potential of a drug
 (C) Acute toxicity of a drug (D) Sub-acute toxicity of a drug
153. Which of the following drugs binds to albumin?
 (A) Phenytoin (B) Lidocaine
 (C) Verapamil (D) Prazosin
154. Which of the following drug does not cause renal toxicity?
 (A) Cyclosporin (B) Tacrolimus
 (C) Cisplatin (D) Febuxostat
155. Thiazide diuretics do not produce ONE of the adverse effects:
 (A) Hyponatremia (B) Hypoglycemia
 (C) Hypokalemia (D) Hyperuricemia
156. The scientist who isolated substance from opium by crystallization and named it morphine?
 (A) Langley (B) Otto loewi
 (C) Frederich Serturmer (D) James Black
157. All are true about romiplostim except:
 (A) It is given subcutaneously
 (B) It is approved for use in patients with Immune thrombocytopenia
 (C) It contains four copies of a small peptide
 (D) It is recombinant erythropoietin
158. Drug used in irritable bowel syndrome with constipation in women is:
 (A) Loperamide (B) Alosetron
 (C) Lubiprostone (D) Clonidine
159. The test for assessing normality of data is
 (A) Bland – Altman test (B) Shapiro – Wilk test
 (C) Fisher's exact test (D) Chi square test
160. Which of the following is not a Histone Deacetylase inhibitor?
 (A) Omacetaxine (B) Panobinostat
 (C) Romidepsin (D) Vorinostat

161. Which of the following is not a prodrug?
 (A) alpha methyldopa (B) Cyclophosphamide
 (C) Mercaptopurine (D) Ampicillin
162. The results of a meta-analysis are presented in a
 (A) Forest plot (B) Receiver Operating Characteristic Curve
 (C) Box and whisker plot (D) Scatter plot
163. In reversed phase HPLC, there is a:
 (A) Non polar solvent/polar column (B) Polar solvent/non polar column
 (C) Non polar solvent/non polar column (D) Any of the above
164. In geriatric population, changes related aging that affect pharmacokinetics of drugs include all except:
 (A) lean body mass is decreased (B) decreased liver blood flow
 (C) increase in serum albumin (D) increase in body fat
165. Tavaborole is indicated in the treatment of
 (A) Onychomycosis (B) Dermatophytosis
 (C) Candidiasis (D) None of the above
166. What is the role of Institutional Ethics Committee?
 (A) To design the protocol for a clinical trial
 (B) To assess whether a clinical trial is ethical to perform in the given subject population
 (C) To analyse the data from the clinical trial
 (D) To assess whether a medicinal product should be granted a marketing authorization
167. Tirofiban is a:
 (A) Antiplatelet drug (B) Anti-inflammatory drug
 (C) Antianginal drug (D) Antiarrhythmic drug
168. Which of the following statements regarding chronic toxicity studies is not correct?
 (A) Required when drug is intended to be used in humans for prolonged periods.
 (B) Usually run concurrently with clinical trials.
 (C) Determine different end points as subacute toxicity tests.
 (D) Tested in a rodent and at least one non-rodent species for ≥ 6 months.
169. Which of the following drugs has a high hepatic extraction ratio?
 (A) Morphine (B) Warfarin
 (C) Phenytoin (D) Diazepam
170. V_{1a} selective antagonist is
 (A) Relcovaptan (B) Tolvaptan
 (C) Conivaptan (D) Nelivaptan
171. Which of the following is an auto receptor?
 (A) $5HT_{1A}$ (B) $5HT_{1B}$
 (C) $5HT_{1D}$ (D) All of the above
172. Which of the following is not a 17α -alkylated androgen?
 (A) Oxandrolone (B) Testosterone enanthate
 (C) Stanozolol (D) Fluoxymesterone

173. Which of the following does not cause acute insulin resistance?
(A) Infection (B) Trauma
(C) Surgery (D) Advanced age
174. Which of the following is not an Integrase Inhibitor?
(A) Raltegravir (B) Atazanavir
(C) Elvitegravir (D) Dolutegravir
175. The most potent topical corticosteroid is
(A) Clobetasol butyrate cream 0.05% (B) Betamethasone benzoate cream 0.025%
(C) Hydrocortisone butyrate cream 0.001% (D) Fluticasone propionate cream 0.05%
176. Hemorrhagic cystitis is caused by:
(A) Cyclophosphamide (B) 6 Mercaptopurine
(C) 5 Fluorouracil (D) Chlorambucil
177. Calculate the arithmetic mean of data 4, 7, 5, 3, 2, 3?
(A) 6 (B) 12
(C) 4 (D) 8
178. All of the following drugs are second generation antipsychotics except:
(A) Risperidone (B) Thioridazine
(C) Quetiapine (D) Ziprasidone
179. Which one of the following drug is a Angiotensin Receptor-Nepriylsin Inhibitor?
(A) Omapatrilat (B) Aliskiren
(C) Sacubitril and valsartan (D) Enalapril
180. Sun protection factor (SPF) is an indicator of
(A) UVA protection (B) UVB protection
(C) Both (A) and (B) (D) Neither (A) or (B)
181. In MDR TB, mycobacterium tuberculosis is resistant to:
(A) Isoniazid and Rifampicin (B) Isoniazid and ethambutol
(C) Rifampicin (D) Pyrazinamide and Ethambutol
182. Tofacitinib used in rheumatoid arthritis is:
(A) IL-1 receptor antagonist (B) Janus kinase inhibitor
(C) IL-6 receptor antagonist (D) TNF- α antagonist
183. Down regulation of receptors can occur as a consequence of
(A) Continuous use of agonists (B) Continuous use of antagonists
(C) Chronic use of CNS depressants (D) Denervation
184. Which of the following statements regarding Nitrofurantoin is correct?
(A) It inhibits cell wall synthesis. (B) It has poor activity against Escherichia coli.
(C) It has slow absorption. (D) It causes brownish discolouration of urine.
185. Bromocriptine is useful in all except:
(A) Endogenous depression (B) Parkinsonism
(C) Prolactinoma (D) Type 2 diabetes mellitus

186. Which of the following is used in pulmonary function testing?
(A) Nitric oxide (B) Helium
(C) Hydrogen Sulphide (D) Oxygen
187. Lithium induced nephrogenic diabetes insipidus can be treated with:
(A) Furosemide (B) Amiloride
(C) Spironolactone (D) None of the above
188. Example for 'class II type' writing lever:
(A) Starling's heart lever (B) Frontal lever
(C) Simple lever (D) All of the above
189. High dose of insulin can be used as an antidote in poisoning with
(A) Cardiac glycosides (B) Ca²⁺ channel blockers
(C) β adrenergic antagonists (D) Sulfonylurea-induced hypoglycemia
190. What is blinding in a clinical trial?
(A) Lack of knowledge regarding the identity of drug
(B) Assigning subjects to either for placebo or active doses
(C) Obtaining written informed consent document from subject
(D) All of the above
191. Which of the following is a nicotinic acid derivative?
(A) Metronidazole (B) Linezolid
(C) Ethionamide (D) Furazolidone
192. Which of the following ACE inhibitor is NOT a prodrug?
(A) Lisinopril (B) Benazepril
(C) Fosinopril (D) Quinapril
193. The principal dose-limiting toxicity of intravenous acyclovir is
(A) Nephrotoxicity (B) Ototoxicity
(C) Hepatotoxicity (D) Cardiotoxicity
194. Which of the following antibiotic does not act by inhibiting protein synthesis?
(A) Azithromycin (B) Streptomycin
(C) Linezolid (D) Vancomycin
195. Measures of studying dispersion of variables in the data are all except:
(A) Variance (B) Range
(C) Mode (D) Mean deviation
196. The following are pairs of nuclear receptors that induce a specific drug metabolism. Which of them is incorrectly matched?
(A) Aryl hydrocarbon receptor and Omeprazole
(B) Pregnane X receptor and Rifampin
(C) Farnesoid X receptor and Fibrates
(D) Vitamin D receptor and Vitamin D

197. Which causes apparent volume of distribution of a drug to exceed total body fluid volume?
(A) High plasma protein binding (B) Slow elimination
(C) Poor lipid solubility (D) Sequestration in body tissues
198. Research participants are equitably selected so that the benefits and burdens of the research are distributed fairly and without arbitrariness or discrimination is principal of _____ according to ICMR national ethical guidelines for biomedical and health research involving human participants.
(A) Principal of essentiality (B) Principal of risk minimization
(C) Principal of non-exploitation (D) Principal of maximization of benefit
199. CPCSEA stands for:
(A) Council for the Purpose of Control and Supervision of Experiments on Animals
(B) Committee for the Purpose of Control and Supervision of Experiments on Animals
(C) Centre for the Purpose of Control and Supervision of Experiments on Animals
(D) Council for the Purpose of Care and Supervision of Experiments on Animals
200. Which of the following is not an N-acetyltransferase substrate?
(A) Caffeine (B) Azathioprine
(C) Hydralazine (D) Amino salicylic acid