# PUNJAB

# PPSC ASSISTANT TOXICOLOGY (JAIL)

# Previous Year Paper





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- 1) Who among the following is Chief Justice of Supreme Court of India?
  - a) Justice Ranjan Gogoi
  - b) Justice Dipak Misra
  - c) Justice Chelameswar
  - d) Justice Madan Lokur
- Government of India has taken control over which among the 2) following company boards recently?
  - a) IL & FS
  - b) Kotak Mohindra
  - c) Tech Mohindra
  - d) HCL
- 3) Which among the following states have the largest number of dolphins in India?
  - a) UP
  - b) Bihar
  - c) West Bengal
  - d) Orissa
- 4) Water stored in earthenware cools because:
  - a) Earthenware has high heat capacity
  - b) Earthenware is a good radiator of heat
  - c) Water oozing out of the pores evaporates
  - d) Earthenware absorbs heat from water
- The type of water which does not produce lather easily with soap 5) is called:
  - a) Soft water
  - b) Heavy water
  - c) Hard water
  - d) Mineral water







- 6) The gas used for inflating balloons is:
  - a) Nitrogen
  - b) Hydrogen
  - c) Helium
  - d) Air
- 7) The main active constituent of tea and coffee is:
  - a) Nicotine
  - b) Chlorophyll
  - c) Caffeine
  - d) Aspirin
- 8) Containers for carrying strong acids are made of:
  - a) Platinum
  - b) Brass
  - c) Copper
  - d) Lead
- 9) Insulin controls:
  - a) Iodine level in the thyroid
  - b) Amount of iron in the blood
  - c) Level of sugar in the blood
  - d) Level of urea in the blood
- 10) The yellow solid used in common bactericidal dressings is:
  - a) Lead chromate
  - b) lodoform
  - c) lodine
  - d) Lead iodide







- What is the speed (in vacuum) of electromagnetic radiation that 11) is used in Ultra Violet and Visible spectroscopic studies?
  - a)  $6 \times 10^8 \text{ m/s}$
  - b) 5 x 10<sup>8</sup> m/s
  - c)  $7 \times 10^8 \text{ m/s}$
  - d)  $3 \times 10^8 \text{ m/s}$
- 12) Which type of transition is involved in Ultra Violet and Visible spectroscopic studies?
  - a) Rotational transition of molecules
  - b) Vibrational transition of molecules
  - c) Electronic transition of bonding electrons in molecules
  - d) All of the above transitions
- What is the unit of absorbance? 13)
  - a) L mol<sup>-1</sup> cm<sup>-1</sup>
  - b) L gm<sup>-1</sup> cm<sup>-1</sup>
  - c) Cm
  - d) No unit



#### Which of the following is not the function of drive mechanism in 14) FTIR spectrometer?

- a) The distance travelled by the moving mirror to obtain an interferrogram
- b) The beam splitter to transmit and reflect 50% of the incident radiation
- c) None of the above (a and b)
- d) Both a and b

#### How is the frequencies calculated in an FTIR spectrometer? 15)

- a) By counting fringes of a interferrogram
- b) By using a laser to determine the wavelengths accurately
- c) By using spectrum of a standard sample
- d) None of the above

#### How many vibrational bands can be observed for Nitrogen (N<sub>2</sub>) in 16) the mid IR region?

- a) Two bands at  $2100^{-1}$  and 2150 cm<sup>-1</sup>
- b) Two bands at 1600<sup>-1</sup> and 1650 cm<sup>-1</sup>
- c) Two bands at 1400<sup>-1</sup> and 1450 cm<sup>-1</sup>
- d) No bands

#### What occurs when the moving mirror in an FTIR spectrometer is 17) at the same distance from the beam splitter as the static mirror?

- a) Constructive interference at the beam splitter
- b) Destructive interference at the beam splitter
- c) None of the above (a and b)
- d) Both a and b

#### What happens when a molecule absorbs infrared radiation? 18)

- a) Transition takes place within the rotational levels
- b) Transition takes place within the vibrational levels
- c) Both a and b
- d) Electronic and vibrational transitions take place





#### Which of the following is used to visualize live cells? 19)

- a) SEM
- b) TEM
- c) Phase contrast microscope
- d) All of the above

#### 20) Electron Microscope can produce a magnification up to:

- a) > 400,000X
- b) 100,000X
- c) 15000X
- d) 100X

#### Degree of scattering in transmission electron microscope is a 21) function of

- a) wavelength of electron beam used
- b) number of atoms that lie in the electron path
- c) number and mass of atoms that lie in the electron path
- d) mass of atoms that lie in the electron path

# 22) Which of the following is true for examining cellular structure using TEM?

- a) Negative-Staining
- b) Shadow Casting
- c) Ultrathin Sectioning
- d) Negative-Staining, Shadow Casting, Ultrathin Sectioning, Freeze-Etching

#### Which of the following is not an advantage of Syringe type pumps 23) used in HPLC?

a) Independent of viscosity







- b) Pulse-less flow
- c) High pressure capability
- d) Unlimited solvent capacity
- 24) Which of the following conditions will increase the efficiency of the column?
  - a) Plate number becomes greater, plate height becomes smaller
  - b) Plate number becomes smaller, plate height becomes smaller
  - c) Plate number becomes greater, plate height becomes larger
  - d) Plate number becomes smaller, plate height becomes larger
- In gas-liquid chromatography, when films are used in the interior 25) of capillary column, then what is the value of Eddy diffusion?
  - a) Greater than 1
  - b) Less than 1
  - c) Zero
  - d) Less than zeros
- 26) Which of the following equations give the expression for plate number, N when 't' is the adjusted retention time and 'W' is the width at the base of the peak which is equal to 4 standard deviations.
  - a) t /4W
  - b) (4t /W)
  - c) 4 (t /W)
  - d) None of the above
- 27) Liquid chromatography can be performed in which of the following ways?
  - a) Only in columns
  - b) Only on plane surfaces
  - c) Either in columns or on plane surfaces
  - d) Neither in columns nor on plane surfaces





- 28) In mass spectrometer, the ions are sorted out:
  - a) By accelerating them through electric field
  - b) By accelerating them through magnetic field
  - c) By accelerating them through electric and magnetic field
  - d) By applying heat
- 29) Which of the following crystals are not suited for x-ray grating?
  - a) Topaz
  - b) Lithium fluoride
  - c) Calcium fluoride
  - d) Sodium fluoride
- 30) When x-rays emitted from molybdenum are allowed to pass through a zirconium filter then which phenomenon is observed?
  - a) It absorbs radiation of shorter wavelength
  - b) It absorbs radiation of longer wavelength
  - c) It allows radiation of shorter wavelength to pass through
  - d) It allows radiation in a particular band to pass through
- 31) Which of the following is not a target metal used in Coolidge tube?
  - a) Rhodium
  - b) Cobalt
  - c) Gold
  - d) Silver
- If an electron from L shell fills the vacancy in K shell it will emit 32) which radiation?
  - a) Kα
  - b) Lα
  - c) KB
  - d) None of these







- 33) In NMR spectroscopy, the spinning nuclei in strong magnetic field must be irradiated by which of the following?
  - a) Perpendicular and stronger field
  - b) Perpendicular and weaker field
  - c) Parallel and stronger field
  - d) Parallel and weaker field
- Mercury will affect which part of the renal tubule 34)
  - a) PCT
  - b) DCT
  - c) CT
  - d) Loop of Henle
- Dialysis is useful in poisoning with all of the following except: 35)
  - a) Methyl alcohol
  - b) Barbiturates
  - c) Ethylene glycol
  - d) Copper sulphate
- 36) If you observe a person with dry mouth, hot skin, dilated pupils, slurred speech and staggering gait, What is the likely cause of person's condition?
  - a) Alcohol intoxication
  - b) Carbamates poisoning
  - c) Organophosphorous poisoning
  - d) Dhatura poisoning
- Magnan's symptoms are characteristic symptoms with which 37) poisoning?
  - a) Alcohol
  - b) Charas
  - c) Cocaine
  - d) Ecstasy







- The brick red color of post mortem lividity is seen in poisoning 38) due to:
  - a) Carbon monoxide
  - b) Hydrogen sulphide
  - c) Phosphorous
  - d) Cyanide
- The combination of alopecia and skin rash, painful peripheral 39) neuropathy and confusion with lethargy are seen in:
  - a) Copper poisoning
  - b) Nickel poisoning
  - c) Selenium poisoning
  - d) Thallium poisoning
- Which of the following is the expression for Eddy diffusion in the 40) column, if 'y' represents obstruction factor, 'd' represents particle diameter, 'D' represents Solute diffusion co-efficient and ' $\lambda$ ' represents function for packing uniformity?
  - a)  $\lambda$  d
  - b) 2 y D
  - c) D  $\gamma$
  - d)  $\lambda/d$
- 41) In case of SEM the intensity of secondary electrons depend on:
  - a) shape of the irradiated object
  - b) chemical composition of the irradiated object
  - c) number of electrons ejected
  - d) chemical composition of the irradiated object, number of electrons ejected and on the number of electrons reabsorbed by surrounding





- 42) Use or abuse of drugs, and its duration of action for the medicolegal process is referred to as:
  - a) Forensic Pharmacology
  - b) Pharmacology
  - c) Toxicology
  - d) None of the above
- A waste to be called toxic, acute oral LD50 concentration should 43) be:
  - a) 2200 mg/kg
  - b) 2300 mg/kg
  - c) 2400 mg/kg
  - d) 2500 mg/kg
- 44) A waste to be called toxic, acute inhalation LC50 concentration should be:
  - a) 2200 ppm.
  - b) 4300 ppm.
  - c) 2400 ppm.
  - d) 10000 ppm.
- 45) The main mechanism of most drugs absorption in GI tract is:
  - a) Active transport (carrier-mediated diffusion)
  - b) Filtration (aqueous diffusion)
  - c) Endocytosis and exocytosis
  - d) Passive diffusion (lipid diffusion)
- Which of the following chelating agents is recommended for 46) acute Lead poisoning with signs of encephalopathy?
  - a) Penicillamine
  - b) Dimercaprol
  - c) Calcium EDTA
  - d) Dimercaprol + Calcium EDTA

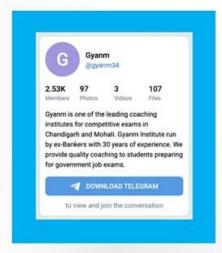








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#### 47) From the following which one is not an option for treatment of toxic alcohol poisoning

- a) Fomepizole
- b) Hydroxocobalamin
- c) Thiamine
- d) Folic Acid

#### Best temperature for purification is: 48)

- a) 0-10°C
- b) 10-45°C
- c) 45-100°C
- d) 100-150°C

#### 49) Specimens of toxicological studies are preserved in

- a) Super saturated solution of common salt
- b) Rectified spirit
- c) 10% of formaldehyde
- d) Alcohol

#### Chocolate brown colour of post-mortem staining is seen in 50)

- a) CO
- b) Putrefaction
- c) Arsenic poisoning
- d) KClO3

#### 51) Correct order of putrefaction

- a) uterus, heart, brain
- b) uterus, brain, heart
- c) brain, heart, uterus
- d) brain, uterus, heart







#### 52) Last organ to putrefy in females is

- a) Liver
- b) Uterus
- c) brain
- d) breast

#### 53) Which poisoning causes 'pink disease'?

- a) lead
- b) copper
- c) mercury
- d) arsenic

#### 54) Poison having garlic smell is

- a) Hemlock
- b) Alcohol
- c) Cannabis
- d) Arsenic

# 55) Antidote for dhatura poisoning is

- a) Physostigmine
- b) Ferric oxide
- c) Aluminium oxide
- d) N-acetyl cysteine

#### Bacteria which grow at a temperature around 10°C are called as 56)

- a) Psychrophites
- b) Thermophiles
- c) Meosphiles
- d) Acidophiles







### 57) Yeast is a

- a) Bacteria
- b) Virus
- c) Fungi
- d) Algae

#### During beer synthesis, conversion of starch into sugar is called as 58)

- a) Canning
- b) Malting
- c) Fermentation
- d) Pasteurization

#### Phosphine liberated in the stomach in aluminum phosphide 59) poisoning is toxic to all except

- a) heart
- b) liver
- c) kidneys
- d) lungs

#### Paraquat poisoning causes 60)

- a) multiple organ failure
- b) respiratory failure
- c) cardiac failure
- d) renal failure

#### Acetyl salicylate and phenobarbitone are better absorbed from 61) stomach because they are

- a) Strong acid remain non-ionic in gastric pH
- b) Weak acid remain non-ionic in gastric pH
- c) Strong base remain ionic in gastric pH
- d) Weak base remain ionic in gastric pH







- 62) The study of dose distribution, metabolism and excretion of drugs in the body is known as
  - a) Pharmacognosia
  - b) Pharmacodynamics
  - c) Dose effective study
  - d) Pharmacotherapy
- 63) Kinetic model in which the amount of compound dominated is constant over time
  - a) o-order kinetics
  - b) 1-order kinetics
  - c) apparent volume of distribution
  - d) one component model
- Bacterium responsible for the oxidation of sulphur containing 64) compounds
  - a) thiobacillus
  - b) nitrobacter
  - c) penicillium
  - d) bacillus thuringiensis







#### 65) **Ecotoxicology means**

- a) death and its aspects
- b) decomposition of human remains
- c) level of courtesy between medical colleagues
- d) poisons in relation to environment

#### 66) Plant Cerbera odollam – other common name

- a) Suicide tree
- b) Castor
- c) Chilli
- d) Fever tree

#### 67) Street names for drug MDMA + Marijuana, known as

- a) Love boat
- b) Speed bell
- c) Mickey finn
- d) Pot

#### 68) Sindoor chemical composition?

- a) Arsenious oxide
- b) Lead tetroxide
- c) Murcurous sulphide
- d) Lead tetra oxide and mercuric sulphide

# 69) Thorne apple is

- a) Dhatura
- b) Nax vomica
- c) Opioid
- d) Cannabis





# 70) Angel dust is?

- a) Phencyclidine
- b) LSD
- c) Morphine
- d) Cannabis

# 71) A motivational syndrome is seen with

- a) Cannabis
- b) Cocaine
- c) LSD
- d) Opium

#### 72) St. Anthony fire disease is

- a) Opioid poisoning
- b) Cannabis poisoning
- c) Ergot poisoning
- d) Dhatura poisoning

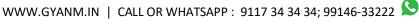
#### Consumption of which of the following poison produce bluish 73) discoloration of stomach during post-mortem examination

- a) oxalic acid
- b) arsenic
- c) sodium amytal
- d) soneryl

#### 74) Saturnine gout is due to

- a) Chronic ion poisoning
- b) Chronic mercury poisoning
- c) Chronic lead poisoning
- d) Chronic arsenic poisoning







- 75) Chemical shift of protons have a frequency range of about
  - a) Megahertz
  - b) 250 MHz
  - c) Kilohertz
  - d) 10 Hz
- If all four buffers work fine for a protein sample which one should 76) be used to make the NMR sample?
  - a) 100 mM tris-HCl, pH7, 100mM KCl
  - b) 50 mM phosphate, pH7, 200mM KCl
  - c) 100 mM tris-HCl, pH7, 20mM KCl
  - d) 50 mM phosphate, pH7, 50mM KCl
- Relative to a 2D, a 3D experiment has a better? 77)
  - a) S/N ratio
  - b) resolution
  - c) baseline
  - d) line shape
- The analysis on the Kennedy assassination bullets were 78) performed by the technique of
  - a) Atomic absorption spectrophotometer
  - b) X-ray diffraction
  - c) inductively coupled plasma emission spectrometry
  - d) neutron-activation analysis
- Chromatography is a physical method that is used to separate 79) and analyse?
  - a) Simple mixtures
  - b) Complex mixtures
  - c) Viscous mixtures
  - d) Metals







- The term may be used only if description is the amount of drug in 80) the body divided by the plasma drug concentration
  - a) o-order kinetics
  - b) 1-order kinetics
  - c) apparent volume of distribution
  - d) one compartment model
- The average salary of 100 employees in an office is Rs. 16000 per 81) month. The management decided to raise salary of every employee by 5% but stopped a transport allowance of Rs. 800 per month which was paid earlier to every employee. What will be the average monthly salary?
  - a) Rs. 16000
  - b) Rs. 16500
  - c) Rs. 16800
  - d) Data insufficient
- The average contribution of 5 men to a fund is Rs. 35. Sixth man 82) joins and pays Rs. 35 more than the resultant average of 6 men. Find the total contribution of all 6 men.
  - a) Rs. 210
  - b) Rs. 245
  - c) Rs. 250
  - d) Rs. 252
- A student attempted 24 questions and secured full marks in all of 83) them. If he obtained 40% in the test and each question carried equal marks, then what was the total number of questions in the test?
  - a) 30



- b) 40
- c) 60
- d) 70
- A city has a population of 300000 out of which 180000 are males. 84) 50% of the population is literate. If 70% of the males are literate, then the number of literate females is:
  - a) 24000
  - b) 30000
  - c) 54000
  - d) 60000
- In an examination, every candidate took Physics or Mathematics 85) or both. 65.8% took Physics and 59.2% took Mathematics. The total number of candidates was 2000. How many candidates took both Physics and Mathematics?
  - a) 750
  - b) 500
  - c) 250
  - d) 125
- 86) The ratio of incomes of Rohit and Pratap is 4:3 and ratio of their expenditure is 3:2, if each saves Rs. 2500, then their incomes are
  - a) Rs. 12000, Rs. 9000
  - b) Rs. 8000, Rs. 6000
  - c) Rs. 10000, Rs. 7500
  - d) None of these







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- 87) If 5 men or 8 women can complete a work in 8 days. Then, 8 women and 15 men can take how many days to complete double work?
  - a) 2 days
  - b) 6 days
  - c) 4 days
  - d) 8 days
- Four men working together can dig a ditch in 42 days. They begin 88) but one man works only half days. How long will, it take to complete the same job?
  - a) 48 days
  - b) 47 days
  - c) 45 days
  - d) 42 days
- A and B can complete work together in 5 days. If A works at twice 89) his speed and B at half of his speed, this work can be finished in 4 days. How many days would it take for A alone to complete the iob?
  - a) 10
  - b) 12
  - c) 15
  - d) 18
- 90) In a certain code language, 'CHILD' is written as 'IMOQJ'. How will 'BABE' be written in the same language?
  - a) HFHJ
  - b) FGFK
  - c) FFGJ
  - d) HFGJ



- 91) If code for ADHI = 1489, then the code for GIEC is:
  - a) 7953
  - b) 7935
  - c) 7593
  - d) 7945
- If code for 'NAME' is 13261422', then what will be the code for 92) TEAM'?
  - a) 7222614
  - b) 1426227
  - c) 7262214
  - d) 7142622

Direction: (Q 93-95) Read the passage given below and answer the question that follow.

A, B, C, D, E, F, are members of a family. They are engineer, stenographer, doctor, draughtsman, lawyer and judge (not in order). A, the engineer is married to the lady stenographer. The judge is married to the lawyer. F, the draughtsman is the son of B and brother of E. C, the lawyer is the daughter-in-law of D. E is the unmarried doctor. D is the grandmother of F. There are two married couples in the family.

- What is the profession of B? 93)
  - a) Judge
  - b) Lawyer
  - c) Draughtsman
  - d) Cannot be determined
- Which of the following is/are couple/couples? 94)
  - a) Only AD
  - b) Only BC
  - c) AD and BC
  - d) AC and BD







- 95) What is the profession of D?
  - a) Judge
  - b) Stenographer
  - c) Doctor
  - d) Cannot be determined
- Find by how much percent 100 is more than 10? 96)
  - a) 90%
  - b) 10%
  - c) 900%
  - d) 100%
- 97) A's salary increase by 20% and then decrease by 20%. What is the net percentage change in A's salary?
  - a) 8%
  - b) 4%
  - c) 6%
  - d) 10%



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- 98) In a certain code language, STREAMLING is written CGTVUHOJMN. How will the word PERIODICAL be written in that language?
  - a) PJSFQMBDJE
  - b) PJSFQMNBJE
  - c) QKTGRMBDJE
  - d) QKTGRMCEKF
- If NARGRUED is the code for GRANDEUR, which word is coded as 99) SERPEVRE?
  - a) PERSEVER
  - b) PRESEVER
  - c) PERSERVE
  - d) PRESERVE
- 100) In a certain code, DECEMBER is written as ERMBCEDE. Which word will be written as ERMBVENO in that code?
  - a) AUGUST
  - b) SEPTEMBER
  - c) OCTOBER
  - d) NOVEMBER
- 101) In a certain code language, '123' means 'hot filtered coffee'. '356' means 'very hot day' and '589' means 'day and night'. Which digit stands for 'very'?
  - a) 9
  - b) 5
  - c) 8
  - d) 6

Directions (Questions 102 to 107). Read the following information to answer these questions:

In a certain code language, '481' means 'sky is blue', '246' means 'sea is deep' and '698' means 'sea looks blue'.





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102)	What number is the code for 'deep'?  a) 1  b) 2  c) 4  d) 6
103)	What number is the code for 'blue'?  a) 1  b) 6  c) 8  d) 9
104)	What number is the code for 'sea'?  a) 2  b) 4  c) 6  d) 8
105)	What number is the code for 'looks'?  a) 4  b) 6  c) 8

106) What number is the code for 'is'?

a) 1

d) 9

- b) 2
- c) 4
- d) 8

107) What number is the code for 'sky'?

- a) 1
- b) 4
- c) 8
- d) None of these







# Directions (Questions 108-109): Read the following information carefully and answer the questions given below:

Ravi is son of Aman's father's sister. Sahil is son of Divya who is mother of Gaurav and grandmother of Aman. Ashok is father of Tanya and grandfather of Ravi. Divya is wife of Ashok.

## 108) How is Ravi related to Divya?

- a) Nephew
- b) Grandson
- c) Son
- d) Data inadequate

# 109) How is Gaurav's wife related to Tanya?

- a) Niece
- b) Sister
- c) Sister-in-law
- d) Data inadequate







# Directions (Questions 110 to 112): Read the information given below to answer these questions:

Rani and Shreshth a are a married couple having two daughters, Medha and Deepti. Deepti is married to Anurag who is the son of Garima and Tarun. Nidhi is the daughter of Anurag. Komal who is Anurag's sister, is married to Harshit and has two sons, Amanand Prem. Prem is the grandson of Garima and Tarun.

# 110) What is the relationship between Aman and Nidhi?

- a) Cousins
- b) Husband-Wife
- c) Father-Daughter
- d) Uncle-Niece

# 111) How is Komal related to Deepti?

- a) Aunt
- b) Sister-in-law
- c) Sister
- d) None of these

# 112) Which of the following is true?

- a) Tarun is Deepti's maternal uncle
- b) Aman is the son of Medha
- c) Garima is Harshit's mother-in-law
- d) Nidhi is the cousin of Komal

# Directions (Questions 113-114): Find the missing term:

# 113) 1, 4, 27, 16, ?, 36, 343

- a) 25
- b) 87
- c) 120
- d) 125







## 114) 1, 9, 25, 49, ?, 121

- a) 64
- b) 81
- c) 91
- d) 100

# Directions (Questions 115 - 119): Study the following information carefully and answer the given questions:

B, M, T, R, K, H and D are travelling in train compartment with III-tier sleeper berth. Each of them has a different profession of Engineer, Doctor, Architect, Pharmacist, Lawyer, Journalist and Pathologist. They occupied two lower berths, three middle berths and two upper berths. B, the engineer, is not on the upper berth. The Architect is the only other person who occupies the same type of berth as that of B. M and H are not on the middle berth and their professions are Pathologist and Lawyer respectively. T is a Pharmacist. D is neither a Journalist nor an Architect. K occupies the same type of berth as that of the Doctor.

# 115) Who is Architect?

- a) D
- b) H
- c) R
- d) Data inadequate

# 116) What is D's profession?

- a) Pharmacist
- b) Lawyer
- c) Doctor
- d) Engineer





# 117) Which of the following pairs occupy the lower berth?

- a) BT
- b) BD
- c) BK
- d) None of these

# 118) Which of the following groups occupies the middle berth?

- a) DKT
- b) HKT
- c) DKR
- d) DHT

# 119) Which of the following combinations of person-berth-profession is correct?

- a) K Upper Lawyer
- b) D Upper Doctor
- c) M Lower Journalist
- d) R Lower Architect

# Directions (Questions 120 to 123): Study the following information carefully and answer the given questions:

A Business School with six Professors L, M, N, O, P and Q, has decided to implement a new scheme of course management. Each Professor has to coordinate one course and support another course. This semester, O's support course is Finance, while three others have it in coordinator's role. P and Q have Marketing as one of their subjects. Q coordinates Operations, which is a support course for both N and P. Finance and IT are L's subjects. Both L and O have same subjects. Strategy is a support course for only one of the Professors.

# 120) Who coordinates the IT course?

- a) L
- b) N
- c) O
- d) None of these







# 121) Which course is supported by M?

- a) Operations
- b) IT
- c) Strategy
- d) Finance

# 122) Who among the following are coordinating the Finance course?

- a) L and N
- b) N and O
- c) L, M and N
- d) M, N and O

# 123) Which course has only one coordinator and one support Professor?

- a) Strategy
- b) Marketing
- c) Operations
- d) Finance

# Directions (Questions 124 to 128): Study the following information carefully and answer the given questions:

Four players A, B, C and D are holding 4 cards each. Each of them has an Ace, a King, a Queen and a Jack. All of them have all the suits (spades, hearts, clubs and diamonds).

- A has Ace of spades and Queen of diamonds.
- II. B has Ace of clubs and King of diamonds.
- III. C has Queen of clubs and King of spades.
- IV. D has Jack of clubs.

# 124) Ace of diamonds is with:

- a) A
- b) B
- c) C
- d) D







- 125) Jack of hearts is with:
  - a) A
  - b) B
  - c) C
  - d) D
- 126) Queen of spades is with:
  - a) A
  - b) B
  - c) C
  - d) D
- 127) C has which of the following with him?
  - a) Ace of hearts
  - b) Jack of spades
  - c) King of hearts
  - d) Queen of spades
- 128) D has which of the following with him?
  - a) Ace of hearts
  - b) Queen of hearts
  - c) King of hearts
  - d) King of clubs
- 129) Raj travelled from a point X straight to Y at a distance of 80 metres. He turned right and walked 50 metres, then again turned right and walked 70 metres. Finally, he turned right and walked 50 metres. How far is he from the starting point?
  - a) 10 metres
  - b) 20 metres
  - c) 50 metres
  - d) 70 metres







- 130) A walks 10 metres in front and 10 metres to the right. Then every time turning to his left, he walks 5, 15 and 15 metres respectively. How far is he now from his starting point?
  - a) 5 metres
  - b) 10 metres
  - c) 15 metres
  - d) 20 metres

Directions (Questions 131 to 132): Letters of the words given below have been jumbled up. You are required to construct the words. Each letter has been numbered and each word is followed by four options. Choose the option which gives the correct order of the letters as indicated by the numbers to form words.

# 131) TLEMNA

123456

- a) 2, 6, 4, 5, 3, 1
- b) 3, 2, 4, 6, 5, 1
- c) 4, 3, 5, 1, 6, 2
- d) 5, 3, 2, 4, 6, 1







- 132) INLASG
  - 123456
  - a) 2, 4, 3, 6, 1, 5
  - b) 3, 4, 6, 1, 2, 5
  - c) 5, 1, 6, 2, 4, 3
  - d) 6, 1, 3, 5, 4, 2
- 133) A meaningful word starting with A is made from the first, the second, the fourth, the fifth and the sixth letters of the word CONTRACT. Which of the following is the middle letter of that word?
  - a) C
  - b) O
  - c) R
  - d) T
- 134) If it is possible to make only one meaningful word with the second, the third, the sixth and the eighth letters of the word FRAGMENT, using each letter only once, then which of the following will be the third letter of that word? If no such word can be formed, then give 'X' as the answer and if more than one such words can be formed, then give 'Y' as the answer.
  - a) E
  - b) T
  - c) X
  - d) Y
- 135) Sam ranked ninth from the top and thirty-eighth from the bottom in a class. How many students are there in the class?
  - a) 45
  - b) 46
  - c) 47
  - d) 48



## 136) Nitin ranks eighteenth in a class of 49 students. What is his rank from the last?

- a) 18
- b) 19
- c) 31
- d) 32

## Directions (Questions 137 to 141): The following questions are based on the information given below:

Data on 450 candidates, who took on examination in Social Science, Mathematics and Science is given below:

Passed in all the subjects 167

Failed in all the subjects 60

Failed in Social Sciences 175

Failed in Mathematics 199

Failed in Science 191

Passed in Social Sciences only 62

Passed in Mathematics only 48

Passed in Science only 52

## 137) How many failed in Social Sciences only?

- a) 15
- b) 21
- c) 30
- d) 42

## 138) How many failed in one subject only?

- a) 152
- b) 144
- c) 61
- d) 56





#### 139) How many passed in Mathematics and at least one more subject?

- a) 210
- b) 203
- c) 170
- d) 94

#### 140) How many failed in two subjects only?

- a) 56
- b) 61
- c) 152
- d) 162

#### 141) How many passed at least on one subject?

- a) 450
- b) 390
- c) 304
- d) 167

## Directions (Questions 142 to 144): Study the information given below and answer the questions that follow:

A publishing firm publishes newspapers A, B and C. In an effort to persuade advertisers to insert advertisements in these newspaper, the firm sends out the following statement to possible advertisers:

A survey of representative samples of the whole population shows that-

Newspaper A is read by 26%;

Newspaper B is read by 25%;

Newspaper C is read by 14%;

Newspaper A and B are read by 11%;

Newspaper B and C are read by 10%;

Newspaper C and A are read by 9%;

Newspaper C only is read by 0%



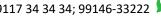


- 142) The percentage of readers who read all the three newspaper is
  - a) 1
  - b) 4
  - c) 5
  - d) 6
- 143) The percentage of readers who read A and B but not C, is
  - a) 2
  - b) 4
  - c) 5
  - d) 6
- 144) The percentage of readers who read at least one of the three newspapers is
  - a) 40
  - b) 50
  - c) 60
  - d) 65

Directions (Questions 145 to 146): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer

- a) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question;
- b) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question;
- c) If the data either in statement I alone or in statement II alone are sufficient to answer the questions; and
- d) If the data in both statements I and II together are necessary to answer the question.





#### 145) Among five friends, A, B, C, D & E. who is tallest?

- D is taller than A and C ١.
- B is shorter than E but taller than D 11.

## 146) Manoj, Prabhakar, Akash and Kamal are four friends. Who among them is the heaviest?

- Prabhakar is heavier than Manoj and Kamal but lighter than ١. Akash
- Manoj is lighter than Prabhakar and Akash but heavier than 11. Kamal

## Directions (Questions 147 to 150): are based on the following information:

Priya and Promila are fast friends. Priya's father, Prem, is a police officer while Promila's father, Somesh, is an engineer. Prem and Somesh have a common friend in Rohan who has two children, Kunal and Renu. Priya and Kunal are college fellows while Promila and Renu are in the same class and study in another college, Promila and Kunal are good debaters and represent their college in inter-college debates. Renu writes poems while Priya is a good singer. Somesh is very proud of his daughter and often talks to his friends about her special talent in painting. Renu's father is a businessman and stays in the same locality where Prem stays while Somesh, who stays in another locality, is more intimate with Prem than with Rohan. Families of all the three persons stay with them.

## In each of the following questions, two statements P and Q are given. Mark your answer as

- (a) if both P and Q are true;
- (b) if one of the two is true and the other is wrong;
- (c) if both the statements are wrong; and
- (d) if it is not possible to draw any conclusion about the correctness or otherwise of either or both P and Q on the basis of information available in the above statement.





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147) P: Priya and Promila read in different colleges.

Promila is a good debater as also a good painter. Q:

**148)** P: Rohan is an electronics engineer.

Priya and Kunal are class-fellows. Q:

149) P: Priya and Renu are college-fellows.

Promila's father is more intimate with Renu's father than with Q: Priya's father.

**150)** P: Somesh is a civil engineer.

Priya and Renu are good debates and represent their colleges in Q: inter college debates.

#### 151) The Indian National Army (INA) came into existence in 1943 in:

- a) Japan
- b) Burma
- c) Singapore
- d) Malaya

#### 152) Match the following:

List I	List II
A. Bhagat Singh	1. Chittagong Armoury
	Raid
B. Laxmi Sehgal	2. Kakori Conspiracy
	Case
C. Ram Prasad Bismil	3. Indian National Army
D. Surya Sen	4. Lahore Conspiracy
	Case





#### Codes

#### ABCD

- 1234 a)
- 1324 b)
- 4231 c)
- 4321 d)
- 153) North-Western parts of India get winter rainfall mainly due to
  - a) North-West monsoon
  - b) Western disturbances
  - c) North-East monsoon
  - d) Retreating monsoon
- 154) Which process does not result in the return of carbon dioxide to the atmosphere?
  - a) Combustion of fossil fuels
  - b) Decomposition of fossil fuels
  - c) Respiration by bacteria
  - d) Photosynthesis by green plants
- 155) The biosphere is the zone of the Earth where life is found. It includes parts of:
  - 1. Hydrosphere
  - 2. Lithosphere
  - 3. Stratosphere
  - 4. Troposphere
- Select the correct answer using the codes given below
  - a) 1 and 4
  - b) 2, 3 and 4
  - c) 1 and 3
  - d) 1, 2 and 4







#### 156) Money Bill can be introduced only

- a) In Legislative Assembly
- b) In Legislative Council
- c) In either of the House
- d) In joint sitting of both Houses

## 157) Which of the following Union Territories has been provided with Legislative Assembly?

- a) Delhi
- b) Chandigarh
- c) Lakshadweep
- d) Dadra and Nagar Haveli

## 158) Which of the following duties/functions has been assigned to the Attorney General of India?

- a) To render legal advice to the Central Government
- b) To arbitrate in disputes between the centre and the States
- c) To control Unions and States income and expenditure
- d) Both b) and c)

## 159) Where was the first Municipal Corporation in India set-up?

- a) Bombay
- b) Calcutta
- c) Delhi
- d) Madras

## 160) The General Agreement on Tariffs and Trade was replaced by:

- a) North American Free Trade Association
- b) South Asian Free Trade Association
- c) World Trade Organisation
- d) None of the above





#### 161) Which of the following countries is not a member of SAARC?

- a) Nepal
- b) Bangladesh
- c) Afghanistan
- d) Myanmar

## 162) Which of the following schemes is/are designed and launched to improve the living standard of rural poor?

- 1. Accredited Social Health Activist (ASHA)
- 2. Janni Suraksha Yojana (JSY)
- 3. Valmiki Ambedkar Malin Basti Awaas Yojana (VAMBAY) Select the correct answer using the codes given below:
  - a) 1 and 2
  - b) 1 and 3
  - c) 2 and 3
  - d) All of these







#### 163) Biogas contains mainly

- 1. Carbon dioxide
- 2. Hydrogen
- 3. Methane
- 4. Oxygen

## Select the correct option

- a) 2 and 4
- b) Only 3
- c) 1 and 3
- d) 1, 2 and 3

#### 164) Where are the Head Quarters of World Bank (WB) located?

- a) Washington
- b) New York
- c) Paris
- d) Oslo
- 165) Which among the following State assemblies have passed the bill giving protection to good Samaritans in road accident cases:
  - a) Kerala
  - b) Karnataka
  - c) Andhra Pradesh
  - d) Tamil Nadu
- 166) The island region Sulawesi recently struck with a Tsunami belongs to which country?
  - a) Malaysia
  - b) Philippines
  - c) Japan
  - d) Indonesia

#### 167) The recent Noble Prize in Physics has been awarded to:

- a) Neutrino Oscillations which shows that neutrinos have mass
- b) Topological phase transitions & phases of matter







- c) Optical lasers that have paved the way for advanced precision instrument
- d) Quantum computers
- 168) Who among the following is Secretary General of UN?
  - a) Antonio Guterres
  - b) Jim Yong Kim
  - c) Patricia Scotland
  - d) Kofi Annan
- 169) In which of the following states Gir Sanctuary recently in news for death of large number of Asiatic lions located?
  - a) Gujarat
  - b) Madhya Pradesh
  - c) Rajasthan
  - d) Maharashtra
- 170) Which among the following Organisations conferred Champions of the Earth Award on PM Narendra Modi?
  - a) WTO (World Trade Organisation)
  - b) IPCC (Intergovernmental Panel on Climate Change)
  - c) European Union
  - d) United Nations







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ANSWER KEY									
Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A.
1	Α	2	А	3	В	4	С	5	С
6	С	7	С	8	D	9	С	10	В
11	D	12	С	13	D	14	В	15	В
16	D	17	Α	18	С	19	С	20	Α
21	С	22	D	23	D	24	Α	25	С
26	В	27	А	28	С	29	D	30	В
31	С	32	Α	33	В	34	Α	35	D
36	D	37	С	38	D	39	D	40	Α
41	D	42	А	43	D	44	D	45	D
46	D	47	В	48	В	49	Α	50	D
51	С	52	В	53	С	54	D	55	Α
56	А	57	С	58	В	59	С	60	Α
61	Α	62	В	63	Α	64	Α	65	D
66	Α	67	Α	68	D	69	Α	70	Α
71	Α	72	С	73	С	74	С	75	С
76	D	77	В	78	D	79	В	80	С
81	Α	82	D	83	С	84	Α	85	В
86	С	87	С	88	Α	89	Α	90	Α
91	Α	92	Α	93	Α	94	С	95	В
96	С	97	В	98	С	99	D	100	D
101	D	102	В	103	С	104	С	105	D
106	С	107	Α	108	В	109	С	110	Α
111	В	112	С	113	D	114	В	115	С
116	С	117	D	118	А	119	D	120	С
121	С	122	С	123	В	124	D	125	А
126	D	127	А	128	С	129	А	130	А
131	С	132	С	133	D	134	D	135	В
136	D	137	А	138	С	139	В	140	D
141	В	142	С	143	D	144	Α	145	D
146	Α	147	Α	148	С	149	С	150	D
151	С	152	D	153	В	154	D	155	D
156	В	157	Α	158	Α	159	D	160	С
161	D	162	Α	163	С	164	Α	165	В
166	D	167	С	168	Α	169	Α	170	D

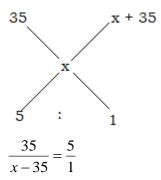
Some answers have been updated in view of latest changes..!!





## **SOLUTIONS**

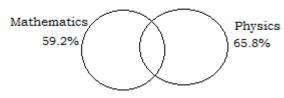
82)



$$x = 42$$
  
= 42 x 6  
= 252 Ans.

- 83)  $40\% \equiv 24$ 10% ≡ 6 100% = 60 Ans
- **84)** Total population = 300000 Literate = Illiterate = 150000 Literate Male =  $\frac{70}{100} \times 180000 = 126000$ Literate Female = (150000-126000) = 24000 Ans.

85)



Both = 
$$59.2 + 65.8 - 100$$

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$$= 25\%$$
  
 $100\% = 2000$   
 $25\% = 500 \text{ Ans.}$ 

86)

87) 5 M x 8 = 8W x 8  

$$\frac{M}{W} = \frac{8}{5}$$
  
Work = 5 x 8 x 8  
Required days =  $\frac{5 \times 8 \times 8 \times 2}{8 \times 5 + 15 \times 8}$   
=  $\frac{5 \times 8 \times 8 \times 2}{160}$   
= 4 Ans.

88) 4 men x 42 days = 3.5 men x daysSo, x = 48 days.

89)

A + B 
$$\rightarrow$$
 5 days

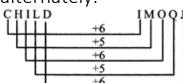
 $2A + \frac{B}{2} \rightarrow 4 \text{ days}$ 
 $20 \text{ units}$ 

A + B  $\rightarrow$  1 day  $\rightarrow$  4 units

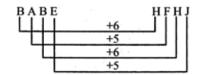
 $2A + \frac{B}{2} \rightarrow 1 \text{ day} \rightarrow 5 \text{ units}$ 

Solving these 2 equations, we get A can do the work in 10 days.

90) The letters of word are moved six and five steps forward alternately.



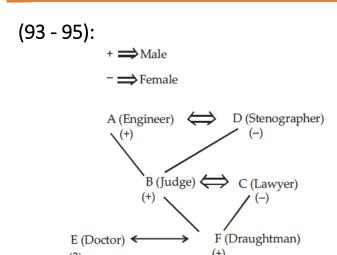
Similarly,



- 91) A, D, H and I have been replaced by their positions in forward alphabetical sequence. GIEC will be coded in the same way. Let us see: A = 1, D = 4, H = 8, I = 9 Therefore, G = 7, I = 9, E = 5, C =
- 92) N A M E 13 26 14 22 R.H.S Value of N is 13 R.H.S value of A is 26 R.H.S value of M is 14 R.H.S value of E is 22 Similarly TEAM 7 22 26 14







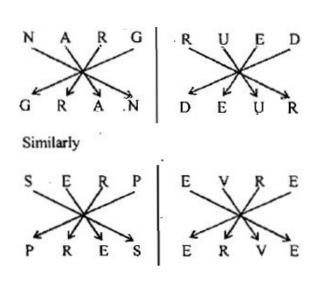
**96)** % more = 
$$\frac{100-10}{10} \times 100\% = 900\%$$

**97)** Net % change = 
$$+20 + (-20) \frac{+(20)(-20)}{100} = -4\%$$

98) Split the word STREAMLING into two groups consisting of equal letters. You get STREA and MLING. Now write each letter of first group two places forward. You get CGTVU. Write each letter of second group one place forward. You get HOJMN. Now join both the groups without changing the order of letters. You get CGTVUHOJMN.

Similarly PERIODICAL is coded as PERIODICAL -> OIREPLACID -> QKTGRMBDJE

99)



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100) Assign numbers to letter and move them like given word.

DECEMBER = ERMBCEDE

12345 678 785 63412

Similarly;

Apply that bold value in the given word;

**ERMBVENO = NOVEMBER** 

785 63412 12345 678

101)

1 2 3

hot filtered coffee

3 3 6

very hot

√5 8 9

and night

Very = 6

(102 - 107):

4 🕸 1

sky is 61u

2 4 6 (sea) is deep

6 9 8 sea looks blue

**102)** Deep – 2

**103)** Blue – 8

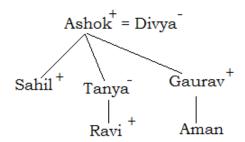
**104)** Sea – 6

**105)** Looks – 9

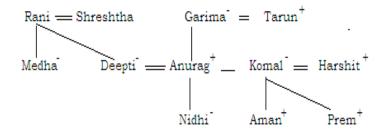
**106)** is – 4

**107)** sky – 1

#### (108 - 109):



## (110 - 112):









$$1 \times 1 \times 1 = 1$$

$$2 \times 2 = 4$$

$$3 \times 3 \times 3 = 27$$

$$4 \times 4 = 16$$

$$5 \times 5 \times 5 = 125$$

$$6 \times 6 = 36$$

$$7 \times 7 \times 7 = 343$$

#### 114)

# (115 - 119):

Persons	Profession	Berth	
В	Engineer	Lower	
М	Pathologist	Upper	
Т	Pharmacist	Middle	
R	Architect	Lower	
K	Journalist	Middle	
Н	Lawyer	Upper	
D	Doctor	Middle	

# (120 - 123):

Professor	Coordinator	Support
L	Finance	IT
М	Finance	Strategy
N	Finance	Operation
0	IT	Finance
Р	Marketing	Operations
Q	Operation	Marketing

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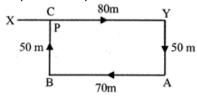
#### (124 - 128):

<b>A</b> –	Ace of Spades	Queen of Diamonds
	Jack of Hearts	King of Clubs

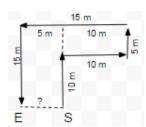
129) The movements of Raj are as shown in figure (X to Y, Y to A, A to B, B to C).

Raj's distance from the starting point

$$X = XC = (XY - YC) = (XY - BA)$$



#### 130)



Based on diagram above, let S be starting point and E be end point. Distance between E and S is 5 m. (follow his path by following the arrow in diagram above. Then look at parallel lines, and apply fact that parallel sides of rectangles have same length)

- 131) M E N T A L
- 132) SIGNAL



- **133)** The first, second, fourth and sixth letters of the word 'CONTRACT' are C, O, T, R, A respectively. The word formed is ACTOR, in which the middle letter is T.
- **134)** The second, third, sixth and eighth letters of the word FRAGMENT are R, A, E and T respectively. The words formed are RATE, TEAR and TARE.

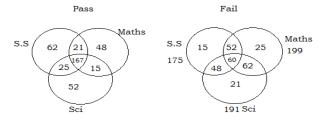
135)

Total = 9 + 38 - 1 = 46

136)

$$\begin{array}{c|c}
 & \text{18 LHS} \\
\hline
 & \text{Nitin} \\
\hline
 & \text{Total} = 49 \\
\hline
 & \text{Nitin} (Last) = \text{Total} + 1 - \text{L.H.S} \\
\hline
 & = 49 + 1 - 18 = 32
\end{array}$$

(137 - 141):



- **137)** Failed in S.S only = 15
- **138)** Failed in one subject only = 15 + 25 + 21 = 61

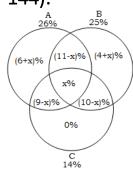


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**140)** Failed in 2 subjects only 
$$= 52 + 48 + 62 = 162$$

**141)** Passed in atleast 1 subject 
$$= 450 - 60 = 390$$

(142 - 144):



142) Those who read all the three = x = 5%

144) At least one of the three

$$(6 + x)\% + (4 + x)\% + 0\% + (11 - x)\% + (9 - x)\% + (10 - x)\% + x\%$$
  
Now, as  $x = 5$ 

So, ans is 
$$11\% + 9\% + 0\% + 6\% + 4\% + 5\% + 5\% = 40\%$$

145)

146) Akash > Prabhakar > Manoj, Kamal

(147 - 150):

- 147) Clearly, Priya and Kunal study in the same college, and Promila and Renu study in the same class in a different college. So, P is true. It is given that Promila is a good debater and Somesh daughter Promila is good in painting. So Q is also true.
- **148)** Clearly, Renu's father. Rohan is a businessman. So, P is false. Also, Priya and Kunal are college fellows. So, Q is also not true.
- **149)** Priya and Renu study in different colleges. So. P is false. Promila's father, Somesh is more intimate with Priya's father. Prem than with Renu's father, Rohan. So, Q is also false.
- **150)** It is mentioned that Somesh is an engineer. But that he is a civil engineer cannot be said for sure. Also, Promila and Kunal are good debaters. So, Q is false.







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