

# Sikkim Public Service Commission

Preliminary Examination for the Post of Sub-Inspector (Sikkim Police)

Paper - II

General Studies - II

Time Allowed : 2 Hrs.

Maximum Marks : 200

## INSTRUCTIONS TO CANDIDATES

*Read the following instructions carefully before answering the questions :-*

1. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**
2. Please note that it is the candidate's responsibility to fill in the Roll Number carefully and without any omission or discrepancy at the appropriate places in the **OMR ANSWER SHEET** for MCQ. Any omission/discrepancy will render the Answer Sheet liable for rejection.
3. **Use only Black Ball Point Pen to fill the OMR sheet**
4. Do not write anything else on the OMR Answer Sheet except the required information.
5. **This Test Booklet contains 100 test items (questions) of Multiple Choice Questions (MCQ) divided into three sections. Section A - General Science, Section B - Mathematics & Section C - English which has to be marked in OMR Sheet provided.**
6. **All items from 1 to 100 carries 2 marks each.**
7. Before you proceed to mark in the Answer Sheet (OMR), you have to fill in some particulars in the Answer Sheet (OMR) as per given instructions.
8. After you have completed filling in all your responses on the Answer Sheet (OMR) and the examination has concluded, you should hand over the Answer Sheet (OMR) to the Invigilator only. You are permitted to take away with you the Test Booklet.
9. **Marking Scheme**  
THERE WILL BE NEGATIVE MARKING FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
  - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to that question will be deducted as penalty.
  - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.
  - (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**

## Section A - General Science

- 1) Gaseous exchange in plants is facilitated by
  - A) Chloroplast
  - B) Roots
  - C) Leaves
  - D) Stomata
  
- 2) Villi are present in
  - A) Outer walls of pancreas
  - B) Inside oesophagus
  - C) Inner lining of small intestine
  - D) Stomach
  
- 3) A plant kept in polythene bag gives water droplets because of
  - A) Translocation
  - B) Respiration
  - C) photosynthesis
  - D) Transpiration
  
- 4) The autotrophic mode of nutrition requires
  - A) Carbon dioxide and water
  - B) Chlorophyll
  - C) Sunlight
  - D) All of these
  
- 5) The antler contains
  - A) Sepals
  - B) Ovules
  - C) Carpel
  - D) Pollen grains

- 6) Union of male and female gametes forms
- A) Egg
  - B) Zygote
  - C) Embryo
  - D) Spore
- 7) The sequence of trophic levels in a food chain are
- A) Herbivore > Carnivore > Producer
  - B) Carnivore > Herbivore > Producer
  - C) Producer > Herbivore > Carnivore
  - D) Producer > Carnivore > Herbivore
- 8) The theory of evolution of species by natural selections was given by
- A) Mendel
  - B) Morgan
  - C) Lamark
  - D) Darwin
- 9) The Master Gland in our body is
- A) Pituitary gland
  - B) Hypothalamus
  - C) Testes
  - D) Adrenal gland
- 10) The important message conveyed by the "Chipko Movement" is
- A) To cut down forest trees for developmental activity
  - B) To involve the community in forest conservation efforts
  - C) To ignore the community in forest conservation efforts
  - D) Right of agencies to order destruction of trees in forests

- 11) The gap between two neurons is called
- A) Impulse
  - B) Aron
  - C) Dendrite
  - D) Synapse
- 12) The compound which inhibits growth in plants and helps in wilting of leaves is \_\_\_\_
- A) Absciscic acid
  - B) Auxin
  - C) Giberellins
  - D) Cytokinin
- 13) Which one of the following is not associated with excretory system in animals
- A) Ureter
  - B) Nephrons
  - C) Kidney
  - D) Uterus
- 14) Select the eco-friendly activity among the following
- A) Using car for transportation
  - B) Using polybags for shopping
  - C) Using dyes for colouring clothes
  - D) using windmills to generate power for irrigation
- 15) The ability of an organism to develop whole body from a broken piece or fragment is called
- A) binary fission
  - B) budding
  - C) regeneration
  - D) multiple fission



- 16) A carboxylic acid ( $C_2H_4O_2$ ) reacts with an alcohol in the presence of an acid catalyst to form a compound 'X'. The Compound 'X' formed is
- A) Aldehyde
  - B) Alcohol
  - C) Ether
  - D) Ester
- 17) The energy flow in different Trophic levels of food chain are
- A) Unidirectional
  - B) Multidirectional
  - C) Anti-directional
  - D) Oppositely directional
- 18) In a voltmeter there are 20 divisions between the 0 mark and 0.5 V mark. The least count of the voltmeter is:
- A) 0.020 V
  - B) 0.025 V
  - C) 0.50 V
  - D) 0.250 V
- 19) Which is the gas that is filled in a packet of chips and that which acts as an Antioxidant?
- A) Helium
  - B) Hydrogen
  - C) Nitrogen
  - D) Oxygen
- 20) The process of loss of water in the form vapour from the aerial parts of the plant is known as
- A) Perspiration
  - B) Transpiration
  - C) Evaporation
  - D) Respiration

- 21) Which of the following is NOT observed during a chemical reaction?
- A) Change in colour
  - B) Liberation of Gas
  - C) Atomicity of compounds
  - D) Change in temperature
- 22) In the human stomach there is an acid called Hydrochloric acid which facilitates the function of an enzyme called
- A) Pepsin
  - B) Trypsin
  - C) Glycine
  - D) Alanine
- 23) A person with this defect in vision can see nearby objects clearly but cannot see distant objects. This defect in vision is called :
- A) Hypermetropia
  - B) Hypometropia
  - C) Presbyopia
  - D) Myopia
- 24) The gap between two neurons where the impulse can be transferred through chemicals are known as :
- A) Dendrites
  - B) Synapse
  - C) Axon
  - D) Cell body
- 25) What is Calcium Sulphate hemihydrate is also known as?
- A) Caustic soda
  - B) Caustic potash
  - C) Bleaching powder
  - D) Plaster of Paris

- 26) If the sugar levels in blood rise, it is detected by the cells in an organ and responds by producing more insulin. What is the name of the organ?
- A) Pancreas
  - B) Gall Bladder
  - C) Kidney
  - D) Liver
- 27) The human eye forms the image of an object at its
- A) cornea
  - B) Iris
  - C) pupil
  - D) retina
- 28) 'Bronze' is an alloy of which two metals?
- A) Copper and Zinc
  - B) Copper and Tin
  - C) Copper and Iron
  - D) Copper and Chromium
- 29) The organism which divides into many daughter cells simultaneously by multiple fission is
- A) Amoeba
  - B) Plasmodium
  - C) Lishmania
  - D) Paramecium
- 30) Galvanisation is a process of protecting Iron and steel from rusting by coating them with thin layer of which metal?
- A) Copper
  - B) Silver
  - C) Mercury
  - D) Zinc

- 31) The process in which the seed or embryo develops into a seedling under appropriate conditions is known as:
- A) Germination
  - B) Pollination
  - C) Fertilization
  - D) Spore formation
- 32) The device used for producing electric current is called a
- A) Ammeter
  - B) Motor
  - C) Generator
  - D) Galvanometer
- 33) The property of an element to exist in different forms is known as
- A) Allotropy
  - B) Isotropy
  - C) Anisotropy
  - D) Isobaric process
- 34) Decompose or rancidity of food is also an example of which chemical reaction?
- A) Addition reaction
  - B) Oxidation reaction
  - C) Reduction reaction
  - D) Substitution reaction
- 35) Sexually transmitted disease named Syphilis is caused by which micro – organism?
- A) Bacteria
  - B) Virus
  - C) Protozoan
  - D) Fungus



- 36) The Chipko Movement (or Hug the trees) for conservation of forest in 1970s originated from which state in India?
- A) Jammu and Kashmir
  - B) Uttarakhand
  - C) Madhya Pradesh
  - D) Rajasthan
- 37) Which of the following 'R' does not belong to the 5 R's to save the environment?
- A) Refuse
  - B) Retake
  - C) Repurpose
  - D) Reuse
- 38) What is the correct full form of 'CFC', which is mainly responsible for Ozone depletion?
- A) Carbon For Care
  - B) Carbon Fluoride Compound
  - C) Chloro Fluoro Carbon
  - D) Carbon dioxide Free Compound
- 39) As we move across the period in a periodic table the Atomic size of elements –
- A) remains same
  - B) decreases
  - C) increases
  - D) expands

- 40) Element 'X' forms a chloride with the formula  $\text{XCl}_2$ , which is a solid with a high melting point. 'X' would most likely be in the same group of the periodic table as
- A) Na
  - B) Mg
  - C) Al
  - D) Si
- 41) What compound is formed in our muscle cells when anaerobic respiration takes place?
- A) Lactic acid
  - B) Glucose
  - C) Malic acid
  - D) Galactose
- 42) 'Alveoli' are found within which organ of a human body?
- A) Heart
  - B) Kidney
  - C) Lungs
  - D) Liver
- 43) The breakdown of pyruvate to form carbon dioxide, water and energy takes place in
- A) cytoplasm
  - B) mitochondria
  - C) chloroplast
  - D) nucleus
- 44) Vinegar used in our kitchen is prepared from an organic acid known as
- A) Ethanoic acid
  - B) Acetic acid
  - C) glacial acetic acid
  - D) all of the above

- 45) Butanone is a four – carbon compound with the functional group
- A) carboxylic acid
  - B) aldehyde
  - C) ketone
  - D) alcohol
- 46) The least distance of distinct vision for a young adult with normal vision is about
- A) 25 m
  - B) 2.5 cm
  - C) 25 cm
  - D) 2.5 m
- 47) Who amongst the following are not the stakeholders who depend upon the conservation of forest?
- A) Local people who live in and around the forest.
  - B) Forest department of the government.
  - C) Students of an urban area school.
  - D) Industrialists of urban area factories.
- 48) The metal salt used for the process of electrolysis is called
- A) Electrolyte
  - B) Peptizing agent
  - C) Electrochemical cell
  - D) Galvanizing agent
- 49) Which of the following will give displacement reaction?
- A) NaCl solution and copper metal
  - B)  $\text{MgCl}_2$  solution and aluminium metal
  - C)  $\text{FeSO}_4$  solution and silver metal
  - D)  $\text{AgNO}_3$  solution and copper metal

- 50) Involuntary actions like blood pressure, salivation and vomiting are controlled by which part of the brain?
- A) Cerebrum
  - B) Medulla
  - C) Cerebellum
  - D) Hypothalamus
- 51) Glomerulus a part of Nephron helps in which life process or system?
- A) nutrition
  - B) respiration
  - C) excretion
  - D) transportation
- 52) Bread mould occurs due to the asexual reproduction of Rhizopus by which process?
- A) Fission
  - B) Fragmentation
  - C) Budding
  - D) Spore formation
- 53) Which of the following is a plant hormone?
- A) Insulin
  - B) Thyroxin
  - C) Oestrogen
  - D) Cytokinin
- 54) A test of this gas is it turns lime water milky. What is the name of the gas?
- A) Hydrogen
  - B) Oxygen
  - C) Carbon dioxide
  - D) Helium



55) When acid and base react, the reaction can also be called

- A) Redox reaction
- B) Addition reaction
- C) Substitution reaction
- D) Neutralization reaction

### Section B - Mathematics

56) The least number that is divisible by all the numbers from 1 to 5 is...

- A) 20
- B) 30
- C) 60
- D) 120

57) The decimal expression of the rational number  $\frac{44}{2^3 \times 5^3}$  will terminate after \_\_\_

- A) One decimal place
- B) Two decimal places
- C) Three decimal places
- D) Four decimal places

58) If 1 is zero of the polynomial  $x^2 - kx - 15$ , then the value of k is

- A) 14
- B) 15
- C) 2
- D) 13

59) Given that one zero of the polynomial  $ax^3 + bx^2 + cx + d$  is zero, then product of other two zeroes is

- A)  $\frac{-c}{a}$
- B)  $\frac{c}{a}$
- C) 0
- D)  $\frac{-b}{a}$

- 60) Number of solution of the pair of equations  $2x + 5y = 10$ , and  $6x + 15y - 30 = 0$  is \_\_\_\_
- A) 0  
B) 1  
C) 2  
D) Infinite
- 61) If  $x=a$  &  $y=b$  is the solution of equations  $x - y = 2$  and  $x + y = 4$  then the value of  $a$  &  $b$  are \_\_\_\_
- A) 3 & 5  
B) 5 & 3  
C) 3 & 1  
D) -1 & -3
- 62) If the lines  $3x + 2kxy = 2$  and  $2x + 5y + 1 = 0$  are parallel then the value of  $k$  is \_\_\_\_
- A)  $\frac{3}{2}$   
B)  $\frac{15}{4}$   
C)  $\frac{2}{5}$   
D)  $\frac{-5}{4}$
- 63) If we add 1 to numerator and denominator of a fraction it becomes  $\frac{1}{2}$  it becomes  $\frac{1}{2}$  if we only add 1 to denominator. The fraction is \_\_\_\_
- A)  $\frac{3}{4}$   
B)  $\frac{2}{5}$   
C)  $\frac{3}{5}$   
D)  $\frac{1}{4}$

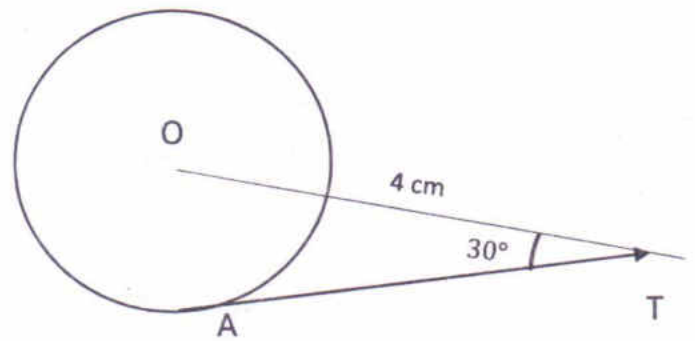
- 64) In  $\Delta ABC$ , D & E are points on sides AB & AC respectively such that  $DE \parallel BL$ , and  $AD : DB = 2 : 3$  if  $EA = 6\text{cm}$ , then AC is equal to
- A) 9 cm
  - B) 15 cm
  - C) 4 cm
  - D) 10 cm
- 65) Two poles of heights 6m and 11m stand vertically upright on a plain ground. If the distance between their feet is 12m, the distance between their top is
- A) 12m
  - B) 13m
  - C) 14m
  - D) 11m
- 66) The value of expressions  $\operatorname{cosec}(75 + \theta) - \sec(15 - \theta) - \tan(55 + \theta) + \cot(35 - \theta)$  is
- A) 0
  - B) -1
  - C) 1
  - D)  $\frac{3}{2}$
- 67)  $\sec \theta + \tan \theta = x$  then  $\tan \theta$  is equal to
- A)  $\frac{x^2+1}{x}$
  - B)  $\frac{x^2+1}{2x}$
  - C)  $\frac{x^2-1}{2x}$
  - D)  $\frac{x^2-1}{x}$

- 68)  $\cos^4 A - \sin^4 A$  is equal to
- A)  $2 \cos^2 A + 1$
  - B)  $2 \cos^2 A - 1$
  - C)  $2 \sin^2 A - 1$
  - D)  $2 \sin^2 A + 1$
- 69) The mode of frequency distribution can be determined graphically by
- A) Histogram
  - B) Frequency polygon
  - C) Frequency curve
  - D) Ogive
- 70) The algebraic sum of the deviation of a frequency distribution from its mean is
- A) Always positive
  - B) Always negative
  - C) 0
  - D) A non-zero number
- 71) Number of tangents that can be drawn through a point which is outside the circle is
- A) 3
  - B) 2
  - C) 1
  - D) 0
- 72) TP & TQ are two tangents to a circle with centre O so that  $\angle POQ = 120^\circ$  then  $\angle OTP$  is equal to
- A) 50
  - B) 30
  - C) 80
  - D) 90



73) In the figure AT is a tangent to a circle with centre O such that  $OT = 4\text{cm}$  and  $\angle OTA = 30^\circ$  then AT is equal to

- A) 4 cm
- B) 2 cm
- C)  $2\sqrt{3}\text{cm}$
- D)  $4\sqrt{3}\text{cm}$



74) If a flagstaff 6m high placed on the top of the tower throws a shadow  $2\sqrt{3}\text{ m}$  along the ground then the angle of elevation Sun is

- A)  $30^\circ$
- B)  $60^\circ$
- C)  $45^\circ$
- D) None of these

75) The probability that a leap year should have exactly 52 Sundays is

- A)  $\frac{2}{7}$
- B)  $\frac{3}{7}$
- C) 1
- D)  $\frac{5}{7}$

### Section C – English

Read the passage carefully and choose the correct answer for the questions given below:

"Uncle" said Luke to the old Sean "You seem to be well fed, though I know no one looks after you. Nor have I seen you leave your residence at any time. Tell me how you manage it?" "Because" Sean replied, "I have a good feed every night at Emperor's orchard. After dark, I go there myself and pick out enough fruits to last a fortnight."

Luke proposed to accompany his uncle to the orchard. Though reluctant because of Luke's habit of euphoric exhibition of extreme excitement, Sean agreed to take him along. At the orchard while Sean hurriedly collected the fruits and left, Luke on the other hand at the sight of unlimited supply of fruits was excited and lifted his voice which brought Emperor's men immediately to his side. They seized him as the sole cause of damage to the orchard. Although Luke reiterated that he was a bird of passage, they pounded him mercilessly before setting him free.

- 76) What does 'Bird of passage' mean in the context of the given passage?
- A) There was a bird in the orchard
  - B) Other people stole from the orchard
  - C) Emperor knew him personally
  - D) He did not visit orchard regularly
- 77) Which of the following can be inferred from the passage?
- A) Luke did not take good care of his uncle
  - B) Emperor was a wicked man
  - C) Lack of self-control had put Luke into trouble
  - D) Luke had a habit of speaking loudly
- 78) How often did Sean visit the orchard?
- A) Daily
  - B) Weekly
  - C) Once in a month
  - D) Every day after midnight

- 79) Choose the word which is most nearly the same meaning as the word 'Reluctant' used in the passage?
- A) Against
  - B) Resistant
  - C) Opposed
  - D) Disinclined
- 80) Why did Sean leave after collecting the fruits?
- A) He feared that the bird's song would awaken the Emperor
  - B) To avoid getting caught by Emperor's men
  - C) He saw the Emperor's men approaching
  - D) He was afraid of the dark

**Choose the correct Antonyms of the words from the options given:**

- 81) Exaggerated
- A) Underwrote
  - B) Condemned
  - C) Ignored
  - D) Underestimated

- 82) Pacify
- A) Excite
  - B) Compose
  - C) Threaten
  - D) Challenge

- 83) Derogatory
- A) Interesting
  - B) Complimentary
  - C) Unnecessary
  - D) Cheerful

- 84) Adversity  
A) Sincerity  
B) Curiosity  
C) Animosity  
D) Prosperity

- 85) Triggered  
A) Choked  
B) Tapered off  
C) Defused  
D) Ignited

**Choose one word for the following sentences:**

- 86) A person living permanently in a certain place.  
A) Resident  
B) Native  
C) Domicile  
D) Subject

- 87) One who loves mankind is called  
A) Optimist  
B) Philanthropist  
C) Optometrist  
D) Trant

- 88) One who comes to settle in a country  
A) Tourist  
B) Emigrant  
C) Immigrant  
D) Visitor



89) One who is habitually good to others

- A) Helper
- B) Altruist
- C) Angel
- D) Humanitarian

90) One who cannot be changed or reformed

- A) Invulnerable
- B) Hardened
- C) Incurable
- D) Incurable

**In the questions below a sentence has been given in Direct/Indirect speech. Choose the alternative which you think best expresses the same sentence in Indirect/Direct speech:**

91) Prem said to me, "Where have you been last night?"

- A) Prem asked me where had I been the previous night.
- B) Prem asked me where I have been the last night.
- C) Prem asked me where I am the previous night.
- D) Prem asked me where I had been the previous night.

92) She said, "Mother please cook me something nice today."

- A) She told her mother to cook her something nice today.
- B) She ordered her mother to cook her something nice that day.
- C) She requested her mother to cook her something nice that day.
- D) She asked her mother whether she could cook her something nice that day.

93) He asked, "Is the secretary coming to the meeting?"

- A) He asked that the secretary was coming to the meeting.
- B) He asked that if the secretary was coming to the meeting.
- C) He asked if the secretary is coming to the meeting.
- D) He asked if the secretary was coming to the meeting.

- 94) "Have you done this sort of work before?" said his new employer.
- A) His new employer asked him whether he has done that sort of work before.
  - B) His new employer asked him whether he has done this sort of work before.
  - C) His new employer asked him whether he had done that sort of work before.
  - D) His new employer asked him whether he had done this sort of work before.
- 95) The beggar said, "Poverty is a great curse."
- A) The beggar said poverty has a great curse.
  - B) The beggar said that poverty is a great curse.
  - C) The beggar said that poverty was a great curse.
  - D) The beggar said that poverty had been a great curse.

**Choose the correct meaning of the Idioms/Phrases given:-**

- 96) To make clean breast of
- A) To gain prominence
  - B) To praise oneself
  - C) To confess without of reserve
  - D) To destroy before it blooms
- 97) To keeps one's temper
- A) To become hungry
  - B) To be in good mood
  - C) To preserve ones energy
  - D) To be aloof from

98) To catch a tartar

- A) To trap wanted criminal with great difficulty
- B) To catch a dangerous person
- C) To meet with disaster
- D) To deal with a person who is more than one's match

99) To drive home

- A) To find one's roots
- B) To return to place of rest
- C) Back to original position
- D) To emphasise

100) To have an axe to grind

- A) A private end to serve
- B) To fail to arouse interest
- C) To have no result
- D) To work for both sides