

2(ROS)0

GENERAL KNOWLEDGE

COMPULSORY

**Time Allowed - 3 Hours****Maximum Marks-200****INSTRUCTIONS**

*Read each of the following instructions carefully before attempting the paper.*

- i) *Attempt Any five questions*
- ii) *All questions are of equal marks*
- iii) *Different questions have different number of sub-parts.*
- iv) *The number of marks for sub-part of a question is indicated at its end.*
- v) *If you encounter any typographically error, please read it as it appears in the text book.*
- vi) *Answers should be precise and coherent.*
- vii) *Attempts of questions shall be counted in sequential order unless struck off.*
- viii) *Partly attempted question/s shall be counted.*
- ix) *Candidate are in their own interest advised to go through the instructions given on the title page of the questions-cum-answer booklet for strict adherence.*
- x) *Note carefully wherever the word limit is specified for questions.*
- xi) *Any page or portion of the page left blank in the question-cum-answer booklet must be clearly struck off by putting a cross (×)*
- xii) *Answers must be written in ENGLISH only.*

S110000

**Note:** Answers of the following questions should be around the word limit fixed for each.

1. a) How does the formation of national park help ecological restoration and conservation? Explain with suitable examples **(200 words)** (20)
- b) Write short notes on any four of the following in **50 words each.** (4×5=20)
  - i) The gravity model
  - ii) Farm forestry
  - iii) Biosphere reserve
  - iv) Acid rain
  - v) Interstate water disputes
  - vi) Impact of social media
  - vii) Jobless growth in India
2. a) Differentiate: **(100 words each)** (2×10=20)
  - i) Latitude and Longitude
  - ii) Rural marketing centers and urban marketing centers.
- b) Define vaccine and explain briefly various types of vaccines used by human beings against different diseases. **(150 words)** (10)
- c) What is GIS (Geographical Information System)? Outline its uses in different fields. **(150 words)** (10)
3. a) Identify the major biosphere reserves of India and discuss their role in the conservation of forests and wild life. **(200 words)** (20)
- b) Write short note on the following in **100 words each** (2×5=10)
  - i) Zonal and Azonal soils.
  - ii) Savanna.
- c) Explain the impact of COVID-19 pandemic on Indian economy. **(150 words)** (10)

4. a) "Beti Bachao Beti Padhao" Scheme launched by Govt of India has improved "the status of girls in India". Comment. (200 words) (20)
- b) "Famine to a considerable extent is a man-made hazard". Elaborate. (100 words) (10)
- c) Write short note on the following in **50 words each**: (2×5=10)
- i) Monetary policy.
- ii) Atal tunnel.
5. a) What is Genome sequencing? Critically analyze its usefulness in agriculture. (200 words) (20)
- b) "India will soon run out of water; extremely high crisis". Discuss the various steps needed to tackle the water crisis. (200 words) (20)
6. a) Write short notes on the following in **50 words**: (4×5=20)
- i) Soil Health Card
- ii) International year of Fruits and Vegetables
- iii) Ecosystem and Food Chain
- iv) RNA sequencing
- b) Write short notes on the following in **50 words**: (4×5=20)
- i) Cyclone Amphan
- ii) New Development Bank
- iii) Galvan Valley
- iv) Baglihar Dam
7. a) Write short notes on the following in **50 words**: (2×5=10)
- i) Momentum for change: Climate Neutral Now
- ii) Nano fertilizers
- b) What is IPCC and its role in controlling climate change? (200 words) (20)
- c) Write short notes on the following in **50 words** : (2×5=10)
- i) Alchemy
- ii) Pardhan Mantri Kisan Samman Nidhi Yojna

8. a) Discuss the following in **50 words** each: **(2×5=10)**
- i) Lapidist
  - ii) Virotherapy
- b) Discuss the following in **50 words** each: **(4×5=20)**
- i) Black hole theory
  - ii) Inter-tropical convergence Zone
  - iii) Shiwalik Hills
  - iv) Butte
- c) Write short notes on the following in **50 words**: **(2×5=10)**
- i) Prof. K Vijaya Raghvan
  - ii) *Prosopis Juliflora*
-

0000254

Total No. of Printed Pages-2]

Roll No. \_\_\_\_\_

2(ROS)0

ESSAY IN ENGLISH

COMPULSORY

*Time Allowed - 3 Hours*

*Maximum Marks-100*

**INSTRUCTIONS**

*Please read the following instructions carefully before attempting the paper.*

- i) The ESSAY must be written in English only.*
- ii) Candidates are required to arrange their ideas in an orderly fashion and to write concisely. Credit will be given for effective and exact expression.*
- iii) Candidates are in their own interest advised to go through the Instructions given on the title page of the Booklet for strict adherence.*
- iv) Word limit is 1000 words and same should be adhered to.*
- v) Any page or portion of the page left blank must be clearly struck off by putting cross mark (×).*

Write a detailed and critical essay on any one of the following:

1. Plastic pollution: An environmental disaster.
  2. Patriarchal attitudes and stereotypes in family relationships.
  3. Violence against men (VAM): Are we overlooking it?
  4. Virtual Friends are real friends: Does technology make us more alone?
  5. New Education Policy: A step forward lowered self reliance.
  6. The story of migrant distress during lockdown.
  7. The “New Normal” in the post-COVID 19 Era.
  8. Non performance is also corruption.
  9. Vocational Education- A way towards self Reliance (Atmanirbhar Bharat)
  10. Social Media-A Boon or A curse?
-

0000213

Total No. of Printed Pages: 4]

Roll No: \_\_\_\_\_

2(ROS)0  
GENERAL ENGLISH  
COMPULSORY

Time Allowed - 3 Hours

Maximum Marks - 100

INSTRUCTIONS

*Please read each of the following Instructions carefully before attempting the paper.*

- i) *The answer must be written in English.*
- ii) *The number of marks carried by each question is indicated at the end of the question.*
- iii) *The answer to each question or part of should begin on a fresh page.*
- iv) *The part/parts of the same question must be answered together and should not be interposed between answers of other questions.*
- v) *Your answer should be precise and coherent.*
- vi) *Candidates should attempt all questions*
- vii) *If you encounter any typographical error, please read it as it appears in the text book.*
- viii) *Candidates are in their own interest advised to go through the general instructions on the back side of the title page of the answer script for strict adherence.*
- ix) *No continuation sheet shall be provided to any candidate under any circumstances.*
- x) *Candidates shall put a cross (×) on blank pages of the answer script.*
- xi) *No blank page be left in between answers to various questions.*
- xii) *No programmable calculator is allowed.*
- xiii) *No stencil (with markings) is allowed.*

1. Write an essay in about 300 words on any one of the following topics: (30)
- Eco-friendly living and sustainable development
  - Role of youth in self-reliant India
  - Cyber security
  - Global terrorism
  - Farmer suicides in India: Reasons and solutions
2. Read the following passage carefully and answer the questions that follow:(25)

The Constitution of India had conferred on women equal rights and opportunities political, social, educational and of employment with men. Because of oppressive traditions, superstitions, exploitation and corruption, a majority of women are not allowed to enjoy the rights and opportunities, bestowed on them. One of the major reasons for this state of affairs is the lack of literacy and awareness among women. Education is the main instrument through which we can narrow down the prevailing inequality and accelerate the process of economic and political change in the status of women.

The role of women in a society is very important. Women's education is the key to a better life in the future. A recent World Bank study says that educating girls is not a charity, it is good economics and if developing nations are to eradicate poverty, they must educate the girls. Society would progress only if the status of women is respected and the presence of an educated woman in the family would ensure education of the family itself. Education and empowerment of women are closely related. But women's education has not received due care and attention from the planners and policymakers. Even after 50 years of independence, women continue to be treated as the single largest group of backward citizens of India. Even when we are at the threshold of the 21st century, our society still discriminates against women in matters of their rights and privileges and prevents them from participating in the process of national and societal progress.

The prevailing cultural norms of gender behaviour and the perceived domestic and reproductive roles of women tend to affect the education of girls. Negative attitude towards sending girls to schools, restrictions on their mobility, early marriage, poverty and illiteracy of parents affect the girl's participation in education. The educational system is the only institution which can counteract the deep foundations of inequality of sexes. Education is the most important instrument of human resource development. Educational system should be used to revolutionize the traditional attitudes and introduce new values of equality.



2. A) i) Why women are not allowed to enjoy the rights and opportunities?  
ii) How would the society progress?  
iii) Which factors adversely affect the education of girls?  
iv) By what process can we remove the sense of inequality of sexes from the minds of the people?  
v) Which instrument is important for human resource development?

**(4 Marks for each question)**

2. B) Give the meanings of following words:

- i) Opportunity  
ii) Exploitation  
iii) Traditional  
iv) Inequality  
v) Awareness

**(1 Mark for each question)**

3. Read the following passage carefully and write a precis in about one-third of its length with a suitable title: **(30)**

Recently, the United Nations released the secretary-general's policy brief on the impact of Covid-19 on the world's education system. The policy brief points to the fact that the closure of schools and other learning spaces have impacted 94% of the world's student population (up to 99% in low and lower-middle income countries). It suggests that despite the delivery of lessons by radio, TV and online, and efforts of teachers and parents, many students still do not have access to education. It highlights how learners with disabilities, those from marginalized communities, displaced and refugee students, and those in remote areas are at the highest risk of being left behind. And it warns that the knock-on effects on child nutrition, child marriage and gender equality could be enormous, The cumulative impact of all these on children may lead to a "generational catastrophe" that could waste human potential, undermine decades of progress. And exacerbate entrenched inequalities. This is not good news for any nation, more so for those in the low and lower-middle income segments such as India. According to UNESCO, nearly 321 million Indian children have been at home since March-end. There is no clarity on when schools will reopen. In the last few decades, especially since the enactment of the Right of Children to Free and Compulsory Education Act, 2009, India has seen a surge in school enrolments and infrastructure development in the primary and secondary segments. But the learning outcomes have not kept pace. The pandemic has now

exacerbated this existing challenge. In addition, the extended period of closure means students don't have access to midday meals; and with parental incomes under strain there could be a spike in drop-out rates, especially among girls. While the focus must be now on ensuring the safety of students, teachers and staff, and putting in place protocols for school reopening, there has to be an extensive assessment of the learning loss and well thought-out plans to bridge the learning gap, and schemes to retain students. This entails tweaking the syllabus and changing pedagogy. This forced break must also be used to align the sector to the very recently released National Education Policy, especially to its foundational learning goals. Last but not least, governments will have to arrange for funds required for the sector. This will be a challenge post-Covid-19, but starving the education sector of finances will be irresponsible, for it is crucial to meeting India's development goals and creating an inclusive society.

(409 Words)

4. **Make sentences of each of the following pair of words to bring out the difference in meaning.** (5)
- (i) Altar-Alter
  - (ii) Right-Right
  - (iii) Bat-Bat
  - (iv) Park-Park
  - (v) Cell-Sell
5. **Change the voice of the following sentences.** (5)
- (i) Who broke the glass?
  - (ii) We are going to watch movie tonight.
  - (iii) Does she make candles?
  - (iv) May God bless you with happiness!
  - (v) He has been invited to their party.
6. **Fill in the blanks with appropriate articles.** (5)
- (i) Yesterday \_\_\_\_\_ European called at my office.
  - (ii) I first met him \_\_\_\_\_ year ago.
  - (iii) Which is \_\_\_\_\_ longest river in India.
  - (iv) He is \_\_\_\_\_ Sachin Tendulkar of our locality.
  - (v) Twelve inches make \_\_\_\_\_ foot.

Total No. of Printed Pages-3]

Roll No. \_\_\_\_\_

2(ROS)0

BOTANY

OPTIONAL

*Time Allowed - 3 Hours*

*Maximum Marks-200*

**INSTRUCTIONS**

*Read each of the following instructions carefully.*

- i) Candidates are in their own interest advised to go through the instructions before attempting the paper.*
- ii) There are eight questions in all, out of which any Five are to be attempted.*
- iii) All questions carry equal marks. The number of marks carried by each question is indicated against it.*
- iv) The questions shall be attempted in sequential order. Partially attempted questions shall also be counted.*
- v) Any page or portion of the page left blank must be clearly struck off by putting cross mark (×).*
- vi) Answers must be written in ENGLISH only.*
- vii) Neat diagrams must be given in questions requiring them.*
- viii) If you encounter any typographical error, please read it as it appears in the text.*

1. a) Differentiate prokaryotes and eukaryotes by giving suitable examples. (10)  
b) Explain structure of a soil profile and give physicochemical properties of each layer in it. (10)  
c) What are Mendel's laws of inheritance? How these were deduced by Mendel's garden pea experiments? Explain. (20)
2. a) What is mitosis? Discuss its various stages and importance in the life cycle of plants. (20)  
b) What do you understand by enzymes? Classify different types of enzymes. Name any two important industrial enzymes and give their commercial uses. (10)  
c) Explain role of different types of tissues involved in translocation mechanism in plants. (10)
3. a) Give an account of post fertilization changes and development of cystocarp and carpospores in *Polysiphonia*. (20)  
b) Discuss xerophytes and their specialized adapted features. (10)  
c) Give a general account of lichens with suitable examples. (10)
4. a) What is photosynthesis? Explain in detail the role of chlorophyll in this phenomena. (20)  
b) Draw labelled diagrams of the following : (2×5=10)
  - i) Parts of a flower
  - ii) Alternation of generation in *Selaginella*.  
c) Define point mutation. What are mutagens? Discuss the process of repair mechanism in damaged DNA. (10)
5. a) Give an account of thallus organization in algae. (10)  
b) What is seed dormancy? Explain the factors which are responsible for dormancy. Discuss different modes of seed dispersal with examples of each. (20)  
c) Depict life cycle of *Marchantia* diagrammatically. (10)
6. a) Write a detailed note on late blight of potato (20)  
b) Enlist important characteristics of Gymnosperms. How they differ from Angiosperms? (10)  
c) What are growth hormones? Explain role of Gibberellins in plant growth. (10)

7. a) Write a detailed note on types of medicinal plants available in Jammu and Kashmir. Explain conservation methods adopted by the Government to preserve them. (20)
- b) What do you understand by mycoplasmas as emerging pathogen in wildlife? (10)
- c) Draw a well labelled cross section of monocotyledonous stem. (10)
8. a) What is genetic engineering? Furnish different steps of recombinant DNA technology used in modifying an organism. (10)
- b) Give characteristic features of Solanaceae family. (10)
- c) Explain any **Ten** of the following in brief : (10×2=20)
- i) Senescence
  - ii) Osmosis
  - iii) Macronutrients and their role in plant growth
  - iv) Photoperiodism
  - v) CAM plants
  - vi) Polyploidy
  - vii) Food poisoning
  - viii) Biofertilizers
  - ix) Antibiotics
  - x) Saprophytes
  - xi) Ecological Succession
  - xii) Ecosystem
  - xiii) Cleistogamy and Chasmogamy.



2(ROS)0  
FIELD CROPS  
PAPER - 2

Time Allowed - 3 Hours

Maximum Marks-200

**INSTRUCTIONS**

*Read each of the following instructions carefully.*

- i) *Candidates are in their own interest advised to go through the instructions before attempting the paper.*
- ii) *Attempt any five questions. All questions carry equal marks.*
- iii) *The number of marks carried by each question is indicated against it.*
- iv) *The questions shall be attempted in sequential order. Partially attempted questions shall also be counted.*
- v) *Any page or portion of the page left blank must be clearly struck off by putting cross mark (×).*
- vi) *Answers must be written in ENGLISH only.*
- vii) *Neat diagrams must be given in questions requiring them.*
- viii) *If you encounter any typographical error, please read it as it appears in the text.*

1. a) What are the advantages and disadvantages of transplanted and direct seed rice crop?  
b) Explain the seed bed preparations, varieties, sowing time, spacing, seed rate, water and nutrient management in wheat crop?
2. a) Explain the following :
  - 1) Weed control in rice.
  - 2) Method of planting in maize.b) Explain the seed bed preparations, varieties, sowing time, spacing, seed rate, water and nutrient management in barley crop?
3. a) Give botanical name, time of sowing, seed rate (kg/ha), spacing, optimum fertilizer dose (kg/ha) and critical stages of irrigation of following crops (**any four**) :
  - 1) Sesamum
  - 2) Sunflower
  - 3) Green gram
  - 4) Linseed
  - 5) Soybeanb) Describe the following points of groundnut cultivation.
  - 1) Soil type
  - 2) Peg
  - 3) Gypsum application
  - 4) Water management
  - 5) Weed control
4. a) Explain the important agronomic practices for cultivation of cotton crop?  
b) Give botanical name, time of sowing, seed rate (kg/ha), spacing, optimum fertilizer dose (kg/ha) and critical stages of irrigation of following crops (any four):
  - 1) Blackgram
  - 2) Tobacco
  - 3) Lentil
  - 4) Fodder oat
  - 5) Berseem



5. a) What important points should be considered while selecting seed material of potato?
- b) Explain the following :
- 1) Importance of pulses in nutrition.
  - 2) Constraints in pulse crop production.
6. a) Give classification of maize based on the character of kernels.
- b) Explain the nutrient and water management in mustard crop?
7. a) Role of legumes forage in soil fertility?
- b) Explain the baling and densification of hay?
8. a) Explain the methods of making silage?
- b) Explain improvement and restoration techniques for degraded grassland?
9. a) Explain the following :
- 1) Method of planting in sugarcane.
  - 2) Sugarcane ratooning.
- b) Why are the advantages of autumn planting of sugarcane?
10. Explain the following fodder sorghum.
- a) HCN poisoning in fodder sorghum.
  - b) Cutting stages of single - cut and multi - cut varieties of fodder sorghum.
  - c) Irrigation in fodder sorghum.
  - d) Mixed cropping in sorghum
-

