

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Geography

GRY 3C 03—GEOGRAPHY OF WATER RESOURCES

(2014 Admissions)

Time : Three Hours

Maximum : 64 Marks

I. Answer *all* the questions given in part A and B :

(A) Answer the following using correct answer :

- 1 Evaporation from snow and ice, the direct conversion from solid to vapour, is known as _____.
- 2 _____ is a measure of the degree to which the pore spaces are interconnected
- 3 _____ is that part of precipitation which infiltrates into the ground and moves horizontally in the soil to meet the nearest stream.
- 4 A/an _____ is a confined aquifer containing groundwater under positive pressure.
- 5 The National Water Development Agency was set up in the year _____.

(B) Mark the statement as True or False :

- 6 The rate at which groundwater moves through the saturated zone depends on the permeability of the rock and the hydraulic gradient.
- 7 Aquiclude is a bed of low permeability along an aquifer.
- 8 In India, agriculture sector does the major exploitation of groundwater.
- 9 Alluvium is the major aquifer system in India which covers a maximum area of around 31 per cent of the entire country.
- 10 Traditional water conservation systems are mostly seen in humid-wet regions.

(10 × 1 = 10 marks)

II. Answer all *seven* of the following in not more than 50 words :

- 11 Hydrologic year.
- 12 Run off cycle.

Turn over

- 13 Drainage basin.
- 14 Stream flow.
- 15 Drainage density.
- 16 Water balance.
- 17 Infiltration.

(7 × 2 = 14 marks)

III. Answer any *three* of the following in not more than 150 words :

- 18 What are the methods of estimating evapotranspiration ?
- 19 State Darcy's Law.
- 20 Enlist the various sources and components of runoff.
- 21 Elucidate the concept of world youth parliament for water.
- 22 How does a barrage prevent flood ?

(3 × 4 = 12 marks)

IV. Answer any *three* of the following in not more than 150 words :

- 23 Explain about the various meteorological factors affecting runoff.
- 24 What is meant by aquifer? Explain its types.
- 25 Bring out the major features of National water policy.
- 26 Write a note on the factors affecting infiltration.
- 27 Mention the major properties of an aquifer.

(3 × 4 = 12 marks)

V. Write essay on any *two* of the following in about 300 words :

- 28 What is Hydrology ? Elaborate the scope of hydrologic studies in the present world.
- 29 Critically evaluate the need to do rainwater harvesting.
- 30 Illustrate and explain the working of hydrologic cycle.
- 31 Explain the role of various organizations in the country in safeguarding water resources.

(2 × 8 = 16 marks)

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Geography

GRY 3C 01.3—GEOGRAPHY OF WATER RESOURCES

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 60 Marks

Section A

*Answer at least **eight** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

1. Geohydrological unit.
2. Interception.
3. Aquitard.
4. Heat balance.
5. Perched water table.
6. Infiltration.
7. Saturated zone.
8. Wetland.
9. Catchment area.
10. Porosity.

(8 × 3 = 24 marks)

Section B

Answer at least five questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

11. Write a note on the forest conservation and management.
12. What do you know about the interlinking of rivers in India ?
13. Give a note on water modern rainwater harvesting.
14. "Over extraction of ground water is harmful" - Explain.
15. Explain about surface water pollution.
16. Discuss the significance of water resources.
17. Write a note on water in system of soil.
18. Briefly explain water conflict between Indian States.

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

19. Explain occurrence and forms and characteristics of water.
20. "Watershed is an ideal planning unit"- Elaborate.

(1 × 11 = 11 marks)

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021

Geography

GRY 3B 03—CLIMATOLOGY

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

Answer at least eight questions.

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

1. Inversion of temperature.
2. Albedo.
3. Frontogeneses.
4. Paleoclimate.
5. Coriolis effect.
6. Hadley cell.
7. Annual range of temperature.
8. Solar radiation.
9. Cumulonimbus cloud.
10. Mistral.

(8 × 3 = 24 marks)

Section B

Answer at least six questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 36.

11. Briefly explain about ozone depletion.
12. Give a short note on formation of fronts.
13. Explain about anticyclone and its characteristics.
14. Briefly discuss about significance of water vapour in atmosphere.
15. What are the controlling factors of winds ?
16. Explain the climatic elements.
17. List out seasonal winds and explain ?
18. Write a short account on fog types.
19. Give a note on vertical distribution of temperature.
20. Briefly explain about the seasonal shifting of pressure belts.

(6 × 6 = 36 marks)

Section C

Answer any two question.

Each question carries 10 marks.

21. Explain greenhouse effect and global warming.
22. Discuss in detail about air mass source regions and classification.
23. Write a detailed account on the precipitation formation and types.
24. Describe horizontal and vertical distribution of pressure.

(2 × 10 = 20 marks)

**THIRD SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION
NOVEMBER 2021**

Geography

GRY 3C 03—GEOGRAPHY OF WATER RESOURCES

(2017—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

I. Answer all *ten* of the following given in part (A) and (B) :

(A) Write the answer True or False for the following :

- 1 Around 30% of the freshwater is stored as groundwater in the world's aquifers.
- 2 2.5% of the total volume of the world's water is estimated to exist as freshwater.
- 3 In India national water policy was implemented in the year 2005.
- 4 Bhakra Nangal project is constructed across Sutlej and Ravi rivers.
- 5 Dr. Rajendra Sharma is most popularly known as water man of Rajasthan.

(B) Fill in the blanks with correct answer :

- 6 _____ refers to the process of transformation of water from solid to gaseous form.
- 7 _____ ocean has the highest average salinity.
- 8 Bharathapuzha is the _____ longest river in Kerala.
- 9 _____ is a point of exit at which the ground water from an aquifer flows out on top of earth's surface and becomes surface water.
- 10 Mullaperiyar dam is located in _____ district of Kerala.

(10 × 1 = 10 marks)

II. Answer all *seven* of the following in not more than 50 words :

- 11 Interception.
- 12 Wetlands.
- 13 Porosity.
- 14 Eri.

Turn over

- 15 Water parliament.
- 16 Water budget.
- 17 Aquifuge.

(7 × 2 = 14 marks)

III. Answer any *six* of the following in not more than 150 words :

- 18 Write a brief note on scope of geographical studies of water resources.
- 19 List out the major sources of surface water pollution.
- 20 Differentiate between saturated and unsaturated groundwater zones.
- 21 Briefly explain about any four major interstate water disputes in India.
- 22 What are the major factors which influence the hydrological cycle in a region ?
- 23 Discuss about the various possibilities due to which a region has a good availability of groundwater.
- 24 Explain why traditional water harvesting systems are less followed in the present world when compared to the past.
- 25 What are the major problems related to interlinking of rivers in India ?
- 26 "Water is a ubiquitous resource". Justify
- 27 Critically assess the negative influences of human intervention in over extracting of groundwater resources.

(6 × 4 = 24 marks)

IV. Write essay on any *two* of the following in about 300 words :

- 28 Explain in detail about components and processes of hydrological cycle with illustration.
- 29 Define aquifer and with the help of suitable diagrams explain about its major classifications.
- 30 Considering watershed as a planning unit review the role of IWMP in watershed development based on some successful stories.
- 31 Describe how climate change influences water availability in a region based on climatic and hydrological condition of India.

(2 × 8 = 16 marks)

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NOVEMBER 2021**

Geography

GRY 3B 03—CLIMATOLOGY

(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Answer all *ten* following given in part (A) and (B) :

(A) Choose the correct answer from the following :

- 1 Solar constant is _____.
(a) 2 calories per sq.cm. (b) 4 calories per sq.cm.
(c) 6 calories per sq.cm. (d) 8 calories per sq.cm.
- 2 The sun is directly overhead at noon on 21st June at _____.
(a) The Equator. (b) 23.5° N.
(c) 23.5° S. (d) 66.5° N.
- 3 The layer of the atmosphere where the chemical composition is not uniform :
(a) Troposphere. (b) Stratosphere.
(c) Homosphere. (d) Heterosphere.
- 4 The pressure belt coincident with doldrums is :
(a) Equatorial low. (b) Sub tropical high.
(c) Sub polar low. (d) Polar high.
- 5 The direction of prevailing wind at 45° N latitude :
(a) North Easterly. (b) South Easterly.
(c) North Westerly. (d) South Westerly.

(B) Fill in the blanks suitably :

- 6 Barometer was invented by _____.
- 7 The percentage of CO₂ is _____.

Turn over

- 8 The imaginary line joining the place having equal sun shine is called _____.
- 9 The temperature at which the air gets saturated with humidity is known as _____.
- 10 _____ cloud produces halos around sun and moon

(10 × 1 = 10 marks)

II. Answer *all* questions is not more 50 words each :

- 11 Distinguish between climate and weather.
- 12 What do understand by Electromagnetic radiation.
- 13 Give brief account on condensation nuclei.
- 14 Give a short note on Tornado.
- 15 What is an Anticyclone ?
- 16 Discuss the formation of Smog.
- 17 What is Horse latitude ?

(7 × 2 = 14 marks)

III. Answer any *nine* of the following is not more than 150 words each :

- 18 Discuss the causes and impacts of air pollution.
- 19 What do you mean by Global warming ? Discuss the human influence on climatic change ?
- 20 Discuss various types of clouds based on altitude.
- 21 Discus the process of condensation and precipitation.
- 22 Analyse the factors affecting insolation.
- 23 Explain the formation and characteristics of monsoon.
- 24 Examine the various types of fog and its characteristics.
- 25 What is the difference between Specific and relative humidity ?
- 26 Discuss the processes of heating and cooling of atmosphere.
- 27 Give an account on instability of atmosphere.

28 What do you understand by Isanomlous temperature ?

29 Write a short note on causes ozone depletion.

(9 × 4 = 36 marks)

IV. Write essays on any *two* of the following in about 300 words each :

30 Analyse the origin, spatial distribution and characteristic of temperate cyclone.

31 Give a detailed account on fronts and associated weather phenomena.

32 Write essay planetary wind system.

33 Give a detailed account on composition and structure of atmosphere.

(2 × 10 = 20 marks)

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**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Geography

GRY 3B 03—CLIMATOLOGY

(2014—2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Answer all *ten* of the following given in A and B :

A) Choose the correct answer from the following :

- 1 The incoming solar radiation is generally termed as :
(a) Sublimation. (b) Insolation.
(c) Condensation. (d) Precipitation.
- 2 The most abundant gas in the atmosphere is :
(a) Nitrogen. (b) Oxygen.
(c) Carbon dioxide. (d) Hydrogen.
- 3 Horse latitude is :
(a) Equatorial low. (b) Sub-tropical high.
(c) Sub-polar low. (d) Polar high.
- 4 Water vapour from clouds change into liquid by :
(a) Evaporation. (b) Precipitation.
(c) Green house effect. (d) Condensation.
- 5 The sloping boundary between two different air masses is called as :
(a) Front. (b) Cyclone.
(c) Hail. (d) Anticyclone.

B) Fill in the blanks suitably :

- 6 Temperature in the troposphere decreases of 1°C for 165 metre ascent is known as _____.
- 7 The line joining places having same atmospheric pressure is called as _____.
- 8 The amount of water vapour actually present in a given volume of air is termed as _____.

Turn over

- 9 The tropical cyclone in the region of China and Japan are called as _____.
- 10 The solid and liquid air pollutants in the atmosphere are generally called as _____.
- (10 × 1 = 10 marks)

II. Answer *all* questions in not more than 50 words :

- 11 Differentiate weather and climate.
- 12 What is albedo ?
- 13 ITCZ.
- 14 Relative Humidity.
- 15 What is Fog ?
- 16 Sea breeze and Land breeze.
- 17 Fronto-genesis.

(7 × 2 = 14 marks)

III. Answer any *five* questions from the following in not more than 150 words :

- 18 Write a short note on the Composition of atmosphere.
- 19 Explain about the vertical distribution of temperature.
- 20 What are the factors controlling atmospheric pressure ?
- 21 Hydrologic Cycle.
- 22 What are the forms of condensation ?
- 23 Write a short note on air mass.
- 24 Explain the characteristics of an anticyclone.

(5 × 4 = 20 marks)

IV. Answer any *four* questions from the following in not more than 150 words :

- 25 Explain about temperature inversion.
- 26 Briefly explain the scope of climatology.
- 27 Describe the main pressure belts found in the globe.
- 28 What are the main forms of precipitation ?
- 29 Write a brief classification of air masses.
- 30 Green house effect.
- 31 What is tropical cyclone ? Explain its characteristics.

(4 × 4 = 16 marks)

V. Write essays on any *two* of the following in about 400 words :

- 32 Summarise the present state of our knowledge of the atmospheric layers and its characteristic.
- 33 Describe the planetary wind system of the earth with suitable illustrations.
- 34 Explain the formation of monsoon and its characteristics.
- 35 Analyse the causes and impacts of global warming.

(2 × 10 = 20 marks)

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THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION, NOVEMBER 2020

Geography

GRY 3B 03—CLIMATOLOGY

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. Insolation.
2. Define Air Mass.
3. Relative Humidity.
4. Greenhouse Gas.
5. Fog.
6. Occluded front.
7. Diurnal temperature.
8. Convectional rainfall.
9. Local winds.
10. Ozone layer.

(8 × 3 = 24 marks)

Section B*Answer at least **six** questions.**Each question carries 6 marks.**All questions can be attended.**Overall Ceiling 36.*

11. What are the controlling factors of atmospheric pressure ? Explain.
12. Give a short note on layered structure of atmosphere.
13. Explain about planetary wind system with illustration.
14. Briefly discussed about the heat budget.
15. What are the different types of forms of condensation ? Explain ?
16. Explain the seasonal shifting of pressure belts.
17. What are the evaporation controlling factors ?
18. Write a short account on the hydrologic cycle.

19. Give a note on temperate cyclone and its characteristics.
20. Briefly explain about the horizontal distribution of temperature.

(6 × 6 = 36 marks)

Section C

*Answer any two questions.
Each question carries 10 marks.*

21. Describe about types of clouds and its formation.
22. Discuss in detail about human influence on climate.
23. Write a detailed account on the significance of weather.
24. Explain about Monsoon and its characteristics.

(2 × 10 = 20 marks)

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**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Geography

GRY 3C 03—GEOGRAPHY OF WATER RESOURCES

(2017 Admissions)

Time : Three Hours

Maximum : 64 Marks

I. Answer all ten of following given in part (A) and (B) :

(A) Write the answer True or False for the following :

- 1 As climatic changes, warming of the atmosphere will influence the hydrological cycle.
- 2 Nile is the longest river of the world.
- 3 River flows are measured in litres per second.
- 4 Chipko movement was started in Kerala.
- 5 Pamba-Achankovil-Vaippar are the three proposed rivers in the Inter basin transfer links in Kerala.

(B) Fill in the blanks with correct answer :

- 6 Water that a person can drink is called _____.
- 7 It is an area of land where precipitation collects and drains off into a common outlet is called _____.
- 8 The project National Water Grid , proposed by _____.
- 9 _____ is the rainwater harvesting project was undertaken by Kerala water authority envisaging construction of ferro cement rain water harvesting systems in the districts of Ernakulam, Alleppy, Trivandrum, and Pathanamthitts.
- 10 _____ is the process of converting waste water to water that can be reused for other purposes.

(10 × 1 = 10 marks)

II. Answer all seven of the following in not more than 50 words :

- 11 Weirs.
- 12 Wetland.
- 13 Ground water.
- 14 Roof top harvesting.
- 15 Water crisis.

Turn over

16 Artesian wells.

17 Aquiclude.

(7 × 2 = 14 marks)

III. Answer any *six* of the following in not more than 150 words :

18 Explain the different forms of water.

19 Discuss the watershed as a hydrological unit.

20 Give a short note on the significance of wetlands.

21 Explain the need for rain water harvesting.

22 Write a short note on National Water Policy.

23 Discuss the physical and chemical characteristics of water.

24 Explain the challenges of interlinking of rivers in India.

25 Write a short note on different ground water zones.

26 Describe the scope and content of hydrology.

27 What are the goals of Alwar water parliament ? Explain

(6 × 4 = 24 marks)

IV. Write essays on any *two* of the following in about 300 words :

28 Explain the components and process of hydrological cycle.

29 Discuss the overdraft of ground water and its impacts on sustainable development.

30 Give a detailed account on conservation of water resources.

31 Write an essay on water scarcity in the world.

(2 × 8 = 16 marks) -

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Geography

GRY 3B 03—CLIMATOLOGY

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Answer all *ten* following given in part (A) and (B) :

(A) Choose the correct answer from the following :

1 Normal Lapse rate in the atmosphere is :

- (a) 6.5° C per 1000 meter. (b) 5.5° C per 1000 meter.
(c) 6° C per 1000 meter. (d) 4.5° C per 1000 meter.

2 Coriolis forces is caused by :

- (a) Rotation of the moon.
(b) Rotation of the earth.
(c) Due to volcanic eruption.
(d) Wind blow from equator to poles.

3 Isotherms are used to show the horizontal distribution of :

- (a) Salinity. (b) Pressure.
(c) Rainfall. (d) Temperature.

4 Wind velocity is measured by :

- (a) Barograph. (b) Wind vane.
(c) Cop anemometer. (d) Aneroid barometer.

5 The central low pressure core of a tropical cyclone is called :

- (a) Trough. (b) Eye.
(c) Depression. (d) Fronts.

(B) Fill in the blanks suitably :

- 6 To reach the earth's surface the rays of the sun take about _____ Minutes.
- 7 The most important source for the latent heat of evaporation is _____.
- 8 The continuous recording of air pressure is done by _____.
- 9 Atmospheric humidity is measured by _____.
- 10 Precipitation in the Mediterranean type of climate is _____.

(10 × 1 = 10 marks)

II. Answer *all* question is not more than 50 words each :

- 11 What do you mean by atmosphere ?
- 12 Write a short note on insolation.
- 13 Give a note on horse latitude.
- 14 Briefly explain about Barometric gradient.
- 15 Bring about the Cirrus cloud.
- 16 Write a short note on greenhouse effect.
- 17 Distinguish between the weather and climate.

(7 × 2 = 14 marks)

III. Answer any *nine* of the following is not more than 150 words each :

- 18 Explain about the atmospheric elements.
- 19 Describe the heating of the atmosphere.
- 20 Examine the forms of precipitation.
- 21 Narrate the forms of condensation.
- 22 List out the protection and maintenances of ozone layer.
- 23 Illustrated the sources of pollution.
- 24 Explain the major sources of greenhouse gases.
- 25 Discuss the significance of horizontal distribution of temperature.
- 26 Explain about the horizontal distribution of pressure.
- 27 Write a brief notes on advection fog.

- 28 Write an account on horizontal variation in pressure.
- 29 Give a note on economic importance of the monsoon.

(9 × 4 = 36 marks)

IV. Write essays on any *two* of the following in about 300 words each :

- 30 Describe the structure of the atmosphere.
- 31 Give an account on world pressure belts.
- 32 Discuss about the major sources and process of global warming.
- 33 Illustrated the global warming and international co-operations.

(2 × 10 = 20 marks)

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**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Geography

GRY 3B 03—CLIMATOLOGY

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Answer all *ten* of following in part (A) and (B) :

(A) Choose the correct answers from the following :

- 1 The lines joining places having same temperature is called :
 - (a) Isobar.
 - (b) Isotherm.
 - (c) Isohel.
 - (d) Isodose.
- 2 The rate of change of pressure from one place to another is known as :
 - (a) High pressure.
 - (b) Compulsion.
 - (c) Tension.
 - (d) Pressure gradient.
- 3 The hot wind which blows in northern plain of India originate over the western parts Rajasthan where the summer temperature are high :
 - (a) Monsoon.
 - (b) The bise.
 - (c) Loo.
 - (d) Khamsin.
- 4 Ice may convert directly into water vapour without intervening liquid state is called :
 - (a) Sublimation.
 - (b) Evaporation.
 - (c) Condensation.
 - (d) Precipitation.
- 5 Changes in temperature without any actual loss or gain of heat are called :
 - (a) Anabatic Change.
 - (b) Katabatic Change.
 - (c) Adiabatic change.
 - (d) Temperature inversion.

Turn over

(B) Fill in the blanks suitably :

- 6 The state of _____ is when a rising parcel of unstructured air cools more rapidly than the surrounding it.
- 7 Temperature in Troposphere decrease by _____ increase in altitude.
- 8 The _____ is a strong warm dry wind which blows periodically to the lee of Alps mountain range.
- 9 _____ are the tropical cyclones of Atlantic.
- 10 The earth radiates all energy absorbed by it in the form of _____ terrestrial radiation.

(10 × 1 = 10 marks)

II. Answer *all* questions in not more than 50 words :

- 11 What is Insolation ?
- 12 What is Temperature inversion ?
- 13 What is Doldrums ?
- 14 What is Fog ?
- 15 Define Hydrological cycle..
- 16 Describe Occluded front
- 17 Explain Ozone.

(7 × 2 = 14 marks)

III. Answer any *five* of the following in not more than 150 words :

- 18 What is heat budget ?
- 19 Brief out pressure belt with suitable diagram.
- 20 What you mean by condensation ?
- 21 What is an anticyclone ?
- 22 What is greenhouse effect ?
- 23 Compare weather and climate.
- 24 What is Cloud ?

(5 × 4 = 20 marks)

IV. Answer any *four* of the following in not more than 150 words :

- 25 Explain the vertical distribution of temperature.
- 26 Explain the formation and characteristics of monsoon.
- 27 Explain the different types of measuring humidity.
- 28 Classify and explain different types of air masses.
- 29 Write a short note on Global warming
- 30 Explain seasonal winds with examples
- 31 Explain different forms of condensation

(4 × 4 = 16 marks)

V. Write essay on any *two* of the following in about 300 words :

- 32 Explain the structure and composition of the atmosphere.
- 33 Explain the planetary wind system with suitable diagram.
- 34 What are the different forms of precipitation ? Explain in detail.
- 35 Explain the formation and characteristics of cyclones.

(2 × 10 = 20 marks)