



**Ramakrishna Mission**  
**Vivekananda Educational and Research Institute**  
**School of Agriculture and Rural Development**  
Faculty Centre for  
**INTEGRATED RURAL DEVELOPMENT & MANAGEMENT (IRDM)**  
**Ramakrishna Mission Ashrama, Narendrapur, Kolkata: 700 103**

**Admission Test for the Course -**  
**2-yr M.Sc. in Agriculture and Rural Development**

**Date: 10.06.2017**

**Time: 1 hour**

**Full Marks: 60**

**Important Instructions**

1. **Section-A and Section-C are compulsory**
2. **Answer any one of the three Groups (I, II, III) under Section-B**
3. **Write answer to Section-C questions in the specified space of this answer script (page 15-17)**
4. **For multiple choice questions under any group, underline the correct answer in the question paper itself. There will be no negative marking for incorrect answers**

**Name of the Candidate** : \_\_\_\_\_

**Roll No.** : \_\_\_\_\_

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<b>Group</b>	<b>Max. Marks</b>	<b>Marks Obtained</b>
<b>Section-A: Aptitude Test (Page No. : 2-5)</b>	<b>20</b>	
<b>Section-B: Subject Test (any one of the following groups)</b>		
<b>Group-I: Social Sciences &amp; Humanities (Page No. : 6-8)</b>	<b>20</b>	
<b>Group-II: Biological Sciences (Page No.: 9-11)</b>		
<b>Group III: Natural Sciences (Page No.: 12-14)</b>		
<b>Section-C: English Writing Skill (Page No.: 15-17)</b>	<b>20</b>	
<b>TOTAL</b>	<b>60</b>	

**SECTION - A**  
**(20 Questions, 1 mark each)**

1. At what time between 8 and 9 o'clock will the hands of a clock be in the same straight line but, not together?
  - a)  $10 \frac{10}{11}$  past 8
  - b)  $10 \frac{5}{11}$  past 8
  - c)  $10 \frac{7}{11}$  past 8
  - d) None of the above
  
2. A student multiplied a number by  $\frac{3}{5}$  instead of  $\frac{5}{3}$ . What is the percentage error in the calculation?
  - a) 33%
  - b) 16%
  - c) 64%
  - d) 57%
  
3. The percentage increase in the area of a square, when each of its side is increased by 20% is
  - a) 36%
  - b) 44%
  - c) 40%
  - d) None
  
4. A man has Rs. 640 in the denominations of one-rupee notes, five-rupee notes and ten-rupee notes. The number of notes of each denomination is equal. What is the total number of notes that he has?
  - a) 60
  - b) 75
  - c) 90
  - d) 120
  
5. What decimal of an hour is a second?
  - a) 0.027
  - b) 0.003
  - c) 0.00027
  - d) 0.000027
  
6. A 154 cubic centimeter metal will be transformed to a metal wire. What can be the maximum length of the wire so that it can pass through a hollow pipe of 2 cm diameter?
  - a) 14.75 cm
  - b) 49 cm
  - c) 98 cm
  - d) 108 cm

7. In an 800 m race, the ratio of the speeds of two contestants 'A' and 'B' is 4:5. If 'A' starts from 200 m, he wins by:
- a) 50 m
  - b) 75 m
  - c) 80 m
  - d) None of the above
8. Select the pair which has the same relationship as "TEN:DECIMAL" -
- a) Seven:Septet
  - b) Four:Quartet
  - c) Two:Binary
  - d) Five:Quince
9. Antonym of – 'exodus' might be
- a) homecoming
  - b) restoration
  - c) return
  - d) influx
10. Here are some words translated from an artificial language –

*godabim* means 'kidney stones'

*romzbim* means 'kidney beans'

*romzbako* means 'wax beans'

Which word could mean 'wax statue'?

- a) *godaromz*
- b) *romzbako*
- c) *wasibako*
- d) *wasibim*

11. Rearrange these parts to form a meaningful sentence –

As David Mumford put it –

- W) but the right theorem on any given topic
- X) Ramanujam felt that the spirit of mathematics
- Y) on any given topic
- Z) demanded of him not merely routine developments

The proper sequence should be –

- a) XZYW
- b) XYZW
- c) WXYZ
- d) XZWY

12. Amitava spends several hours working in his vegetable and flower gardens. Rupak spends his free time reading and listening to classical music. Both Amitava and Rupak like to cook. Which of the following statement is logically most acceptable?

- a) Amitava enjoys planting and growing vegetables.
- b) Amitava does not like classical music.
- c) Rupak cooks the vegetables that Amitava grows.
- d) Rupak enjoys reading Bankimchandra and listening to Ustad Allauddin Khan

13. *Statement:* "In a joint family, the total earning per month is Rs.60,000. Out of these, Rs.40,000 were earned by male family members."

*Conclusions:*

- I. Two-third of the family members is men
- II. The high salary earners of the family are men

- a) Only Conclusion I follows
- b) Only Conclusion II follows
- c) Both Conclusion I and II follow
- d) Neither Conclusion I nor Conclusion II follows

14. Find the odd one out in the series - 331, 482, 551, 263, 383, 362, 284

- a) 331
- b) 551
- c) 362
- d) None of the above

15. One word replacement for "A person pretending to be somebody he is not" –

- a) Traitor
- b) Imposter
- c) Magician
- d) Liar

16. Fill up the blank in the following series: ZA<sub>5</sub>, Y<sub>4</sub>B, XC<sub>6</sub>, W<sub>3</sub>D, \_\_\_\_\_

- a) E<sub>7</sub>V<sub>2</sub>
- b) V<sub>2</sub>E<sub>7</sub>
- c) VE<sub>7</sub>
- d) VE<sub>5</sub>

**Q: 17-20: Study the following table and answer Questions 17 to 20**

Given below is a classification of 100 students based on the marks obtained by them in the annual examination -

Subject	Marks out of 100				
	80 and above	60 and above	40 and above	20 and above	0 and above
English	9	32	80	92	100
Bengali	4	21	66	81	100
Average (aggregate)	7	27	73	87	100

17. What is the difference between the number of students passed with 60 as cut-off marks in Bengali and those passed with 60 as cut-off marks in aggregate?

- a) 3
- b) 4
- c) 5
- d) 6

18. If at least 60% marks in English are required for pursuing higher studies in English, what percentage of students will be eligible to pursue higher studies in English?

- a) 32
- b) 21
- c) 27
- d) 41

19. The percentage of students getting at least 60% marks in Bengali over those getting at least 40% marks in aggregate, is approximately –

- a) 21
- b) 27
- c) 29
- d) 31

20. The number of students scoring less than 40% marks in aggregate is -

- a) 13
- b) 19
- c) 20
- d) 27

## **SECTION - B**

**(Any one group to be attempted; 20 Questions, 1 mark each)**

### **GROUP-I (SOCIAL SCIENCES & HUMANITIES)**

1. According to anthropologists, human personality is shaped by –
  - a) genetic factor
  - b) environment
  - c) civilization
  - d) culture
  
2. Which of the following agricultural seasons are most likely to be present in the rainfed region of India?
  - a) Pre-Kharif
  - b) Kharif
  - c) Rabi
  - d) None of the above
  
3. Agriculture and domestication of animals were started in –
  - a) Neolithic age
  - b) Mesolithic age
  - c) Paleolithic age
  - d) Chalcolithic age
  
4. Infant Mortality Rate is \_\_\_\_\_ from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes)
  - a) the annual number of female deaths per 10,000 live births
  - b) the annual number of female deaths per 1,000 live births
  - c) the annual number of female deaths per 1,00,000 live births
  - d) the annual number of female deaths per 100 live births
  
5. The concept of quadruple division of social stratification in India is thought to have come from –
  - a) Rigveda
  - b) Yajurveda
  - c) Samaveda
  - d) Atharvaveda
  
6. How many Sustainability Development Goals have been adopted in the United Nations?
  - a) 14
  - b) 15
  - c) 16
  - d) 17

7. The central idea of a 'Mixed economy' is
- promotion of agriculture and industry by the state
  - co-existence of public and private sector
  - importance of small scale industry along with heavy industry
  - All of the above
8. Which of the following Act/s provide/s special provisions to safeguard women and their interests?
- Immoral Traffic (Prevention) Act 1956
  - Child Marriage Restraint Act 1929
  - Dowry Prohibition Act 1961
  - All of the above
9. What is the full form of ICDS?
- Integrated Child Development Scheme
  - Intensive Child Development Scheme
  - Integrated Cattle Development Scheme
  - International Child Development Service
10. As per the Census 2011, percentage of scheduled caste population in India is
- 16.7%
  - 6.1%
  - 8.6%
  - 22.7%
11. Mismi, Garo, Naga tribes live in which part of India?
- North-Eastern
  - Nilgiri Hills
  - Chota Nagpur Plateau
  - Western Ghats
12. Which of the followings is true?
- National Expenditure = National income
  - National Expenditure = National income + National savings
  - Nation Expenditure = National income + Taxes
  - National Expenditure = National income - Taxes
13. Which of the following states does not have Panchayati Raj Institutions
- Assam
  - Nagaland
  - Kerala
  - Bihar

14. The main objective of 'Yuvasree' scheme of Government of West Bengal is to

- a) provide vocational training to the unemployed youth
- b) encourage rural youth to participate in sports and culture
- c) provide financial assistance to the unemployed youth
- d) prevent college dropout among the rural youth

15. Top cricketers tend to earn more than professors in India because

- a) cricketers gives more entertainment and thus generates more utility
- b) professors do not add enough value to educational programmes
- c) the labour market is imperfect
- d) top cricketers are relatively scarce in comparison to professors

16. In the context of Indian rural development, TSP stands for -

- a) Thrift Savings Plan
- b) Total Sanitation Project
- c) Tribal Sub Plan
- d) Tiger Saving Policy

17. Community Organization is a –

- a) flagship rural development programme
- b) method of Social Work practice
- c) participatory appraisal technique
- d) tool used in Sociological enquiry

18. Littoral and Swamp forests may be found in

- a) Andaman and Nicobar Islands
- b) Western Ghats
- c) Chota Nagpur Plateau
- d) None of the above

19. Who can be a member of Gramsabha?

- a) Panchayat Pradhan only
- b) Local Member of the Legislative Assembly
- c) All voters of an electoral booth under a Gram Panchayat
- d) None of the above

20. Cenozoic Era covers the period –

- a) from 544 to 248 million years ago
- b) from 248 to 65 million years ago
- c) from 65 million years ago to the present day
- d) none of the above



## **GROUP-II (BIOLOGICAL SCIENCES)**

1. Phylogeny refers to

- a) a group of phyla
- b) life history of plants
- c) genetics of animals
- d) evolutionary history of species from its ancestors

2. During photosynthesis the oxygen in glucose comes from

- a) water
- b) Carbon di-oxide
- c) O<sub>2</sub> from air
- d) Both a & b

3. Which of the following traits was not studied by Mendel?

- a) Flower position
- b) Seed colour
- c) Flower colour
- d) Seed size

4. Transcription is the transfer of genetic information from

- a) DNA to RNA
- b) tRNA to mRNA
- c) DNA to mRNA
- d) mRNA to tRNA

5. The root nodules of legumes contain a pink pigment which has high affinity for oxygen. This pigment is

- a) Nod haemoglobin
- b) Leghaemoglobin
- c) Haemoglobin
- d) Bacterial haemoglobin

6. Development of a fruit without fertilization is known as

- a) Parthenogenesis
- b) Polyembryony
- c) Budding
- d) Apomixes

7. Pointed gourd is a

- a) monoecious plant
- b) hermaphrodite plant
- c) dioecious plant
- d) polygamous plant

8. To overcome interspecific hybridization, the method mostly adapted is

- a) pollen culture
- b) ovule culture
- c) embryo culture
- d) callus culture

9. The spindle forms in the

- a) G<sub>1</sub> phase
- b) G<sub>2</sub> phase
- c) M phase
- d) S phase

10. A promoter is the site on DNA, which

- a) initiates transcription
- b) regulates termination
- c) codes for RNA
- d) transcribes repressor

11. The heavy and light chains of immunoglobulins molecules are joined together by

- a) hydrogen bonds
- b) peptide bonds
- c) di-sulfide bonds
- d) salt bridge formation

12. In a family, father is normal and mother is having disease and the disease is transmitted to son, not to daughter. This is due to

- a) Sex linked inheritance
- b) Autosomal dominance
- c) Sex limited inheritance
- d) None of the above

13. Which of the following is the largest order of class insecta?

- a) Hemiptera
- b) Hymenoptera
- c) Coleoptera
- d) Diptera

14. In helminthes, flame cells are component of their

- a) excretory system
- b) respiratory system
- c) reproductive system
- d) nervous system

15. Which of the following is capable of oxidizing sulfur to sulfates?

- a) *Thiobacillus thiooxidans*
- b) *Desulfotomaculum thermoacetoxidans*
- c) *Rhodospirillum rubrum*
- d) *Rhodomicrobium vannielii*

16. Nitrogen fixation by the microorganisms can be detected by adopting the approach of

- a) demonstrating growth in a nitrogen free medium
- b) culturing the microorganisms in the presence of nitrogen labelled with isotopic nitrogen measuring  $^{15}\text{N}_2$  by mass spectrometer
- c) cultivating the organisms in the nitrogen based medium for long period
- d) Both a & b

17. Which of the following groups of algae do not have eukaryotic organization?

- a) Blue green algae
- b) Green algae
- c) Golden brown algae
- d) Red algae

18. The final common pathway of Metabolism is

- a) Cori's Cycle
- b)  $\beta$ -oxidation pathway
- c) TCA Cycle
- d) Kreb's Cycle

19. Synthetic seeds are produced by encapsulating somatic embryo with

- a) Sodium nitrate
- b) Sodium dodecyl sulphate
- c) Sodium alginate
- d) Sodium HEPES

20. Which of the followings is known as Super bug that can clean up oil spills?

- a) *Escherichia coli*
- b) *Bacillus subtilis*
- c) *Pseudomonas putida*
- d) *Lactobacillus acidophilus*

**GROUP-III (NATURAL SCIENCES)**

1. According to Lowry and Bronsted theory, an acid tends to
  - a) gain a proton
  - b) lose a proton
  - c) accept an electron
  - d) donate an electron
  
2. Acid anhydrides are formed by the chemical reaction of
  - a) two molecules of an alcohol
  - b) two molecules of an acid
  - c) one molecule of an alcohol and an acid
  - d) None of the above
  
3. The value of  $(1-\cos^2\theta)/(1-\sin^2\theta)$  is
  - a)  $\tan^2\theta$
  - b)  $\cot^2\theta$
  - c) 1
  - d)  $\cos^2\theta$
  
4. A chemist dissolves 98.4 g of  $\text{FeSO}_4$  in enough water to make 2 litres of solution. What is the molarity of the solution? (MW of  $\text{FeSO}_4$  152.0)
  - a) 0.65 (M)
  - b) 0.32 (M)
  - c) 49.2 (M)
  - d) None of the above
  
5. If the radius of a spherical cell is increased by 2 times, its surface area will be
  - a) increased by 2 times.
  - b) increased by 4 times.
  - c) decreased by 2 times.
  - d) decreased by 4 times.
  
6. In the presence of nickel at  $120^\circ\text{C}$  temperature, ethanes are produced from ethylene. This reaction can be denoted as
  - a) oxidation
  - b) reduction
  - c) phosphorylation
  - d) decarboxylation
  
7. The value of  $(\log_5 25)/(\log_6 36)$  is
  - a) 1
  - b) 2
  - c) 4
  - d) 7

8. Light travels fastest through which of the following materials?

- a) diamond
- b) water
- c) glass
- d) air

9. The chemical name of  $\text{NaN}_3$  is

- a) Sodium nitride
- b) Sodium tri-nitride
- c) Sodium azide
- d) Sodium tri-azide

10. The value of  $(Y^{a-b})^x (Y^{b-c})^x (Y^{c-a})^x$  is

- a) 0
- b) 1
- c) Y
- d)  $\infty$

11. Soil reaction or pH is the

- a) negative logarithm of  $\text{H}^+$  ion concentration in soil solution.
- b) logarithm of  $\text{H}^+$  ion concentration in soil solution.
- c) activity of  $\text{OH}^-$  ion in soil solution in the soil.
- d) All of the above

12. Which of the followings is a trace element?

- a) Ca
- b) K
- c) Mg
- d) Cu

13. The radioisotope of uranium ( ${}_{92}\text{U}^{238}$ ) is transmuted into an isotope of thorium ( ${}_{90}\text{Th}^{234}$ ) with release of

- a)  $\alpha$ -particle
- b)  $\beta$ -particle
- c)  $\gamma$ -particle
- d) Both a & b

14. Conversion of 1  $\eta\text{m}$  to 1  $\mu\text{m}$  is done by

- a) multiplication by 1000
- b) division by 1000
- c) multiplication by 100
- d) division by 100

15. What will be the resistance of a 100 W, 220 V electric bulb?

- a) 2.2
- b) 440
- c) 488
- d) None of the above

16. Ion channels are selective in nature because of its distinguishing power based on

- a) charge of the ions
- b) geometry of the ions
- c) Both a & b
- d) None of the above

17. The inert gases are \_\_\_\_\_ in water

- a) insoluble
- b) soluble
- c) sparingly soluble
- d) All of these

18. Minimum number of unequal vectors which can give zero resultant are

- a) one
- b) two
- c) three
- d) four

19. Rainbow is formed due to —

- a) absorption of sunlight in minute water droplets
- b) diffusion of sunlight through water droplets
- c) ionisation of water deposits
- d) refraction and reflection of sunlight by water droplets

20. If  $f(x)$  is an odd function, then  $|f(x)|$  is

- a) an odd function
- b) an even function
- c) neither odd nor even
- d) even and odd

## SECTION – C

**1. Answer any one of the followings (within 300 words). Write your answer on page no. 15, 16 and 17.**

- a) What are the major problems of youth in India? What do you suggest for arresting such problems?
- b) “One child, one teacher, one book, one pen can change the world” – Reflect on this quote of Malala Yousafzai with special reference to rural India.
- c) “You can tell the condition of a Nation by looking at the status of its Women” – Comment on these words of Pandit Nehru in the context of today’s Indian society.

## **SECTION – C**



## **SECTION – C**