Day & [	Date:	Friday, 28-04	-2017		Max. Marl
Time: 1	0.30	AM to 01.00 F	PM		
		<b>N.B. :</b> 1, 2) 3)	) Q. <b>1</b> and Q. <b>2</b> and Attempt <b>any th</b> Figures to the <b>ri</b>	e <b>compulsory</b> . <b>ree</b> questions from Q i <b>ght</b> indicate <b>full</b> marl	. no. 3 to Q. no. ks.
Q.1 A	<b>A) S</b> 1)	elect correct The unit of r a) amp.	alternatives. resistance is b) ohms	c) volts	d) watts
	2)	P-n junction a) Reverse c) self biasi	diode conducts biasing ng	in b) Forward bia d) none of thes	ising se
	3)	Current in th a) Two type c) Reverse	ne FET is es type	b) One type d) Both a ar	nd b
	4)	When comp a) Low	are to other filter b) High	rs active filter gain is c) Moderate c	I) None of these
	5)	Op.Amp.is t a) coupled c) direct co	basically amplifier upled amplifier	b) differentia d) none of t	al amplifier hese
	6)	The most co multivibrator a) 741	ommonly used IC r is b) 555	c) 556	f astable d) 7400
B	<b>5) S</b> 1) 2) 3) 4)	ate True or I Passive ele P-n Junctio direction. FET is havi Gain decre	False ements dissipate n diode is used t ng very high inpe ased -20 db pee	power. to conduct the curren ut impedance than B r decade in first order	t in only one JT. <sup>-</sup> active filter.
C	<b>;) F</b> 1) 2)	<b>II in the blan</b> Out of pass The basic r	<b>ks.</b> sive device is naterial of LED is	than its input.	

M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 **ELECTRONICS SCIENCE** FUNDAMENTALS OF ELECTRONICS (OET)

- 3) The mathematical operations can be performed by the circuits constructed using IC \_\_\_\_\_.
- 4) The comparator compares the magnitude of \_\_\_\_\_ input signals.

Seat No.

Max. Marks: 70

06

7.

04

Q.2	Wri	te short notes.	
	a)	Passive and active elements and their uses.	05
	b)	Working of Solar cell. Hybrid parameters of a transistor	05
	C)		04
Q.3	a)	Explain the working of a voltage divider circuit and mention its application.	08
	b)	Define Ohm's law. How it is used in a circuit.	06
Q.4	a)	Explain the construction and working of solar cell and mentions its applications.	08
	b)	Explain the use of Thevenin's theorem to simply a network.	06
Q.5	a)	With a neat diagram explain the working of an op. amp. Integrator and derive the equation of output parameter and draw the output waveform under sine and square wave input	80
	b)	Draw the input and output characteristics of a transistor in CE and list its applications.	06
Q.6	a)	Explain the working of instrumentation amplifier and mention its	08
	b)	Draw the circuit diagram of FET amplifier and explain its working.	06
Q.7	a)	Draw the circuit diagram of an op. amp. comparator and justify its working with input and output waveforms.	08
	b)	Design a DC power supply capable of outputting 15 volts/1A using 3-pin regulator IC.	06

Max. Marks: 70

#### Seat No.

## M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 PHYSICS (APPLIED ELECTRONICS) **ELECTRONIC INSTRUMENTATION (OET)**

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Answer any five questions.

- 2) Questions 1 and 2 are compulsory.
- 3) Attempt any three from Q.3 to Q.7.
- 4) Figures to the right indicate full marks.
- 5) Use of nonprogrammable calculator is allowed.

#### Q.1 A) Choose correct alternatives:

- 1) It is ability of the sensor to indicate the same output over a period of time for a constant input
  - a) Stability b) Resolution c) Impedance d) Error
- A Peizo-electric crystal generates voltage when subjected to \_\_\_\_\_ force.
  - a) Electrical b) Mechanical c) Gravity d) All of the above
- 3) Potentiometer transducers are used for the measurement ofa) Pressure b) Displacement c) Humidity d) Both (a) and (b)
- 4) With the increase in the intensity of light, the resistance of a photoconductor cell
  - a) Decreases

c) Remains same

- b) Increases
- d) Changes randomly

#### 5) An rms reading voltmeter can accurately measure voltage of-

- a) Sine waveforms c) Saw tooth waveforms
- b) Square waveforms d) All of these

#### 6) The Q-meter works on the principle of-

- a) Parallel resonance
- b) Series resonance
- c) Both (a) and (b)
- d) Neither series resonance nor parallel resonance.
- 7) Which term applies to the maintenance of a given signal level until the next sampling? b) Holding
  - a) Aliasing
  - c) Shannon frequency sampling d) Stair-stepping
- 8) Isolation amplifier actually operates on the principle of
  - a) Attenuation c) Clipping d) Amplification b) Filtering

#### B) State True or False:

- 1) Passive transducer is based on principle of energy conversion.
- 2) LVDT is a non-linear transducer.
- 3) Thermistor has negative coefficient of temperature.
- 4) Negative feedback in amplifiers improves the stability.
- 5) Piezoelectric transducer can measure static pressure.
- 6) AC bridges are used for the measurement of inductance and capacitance

#### Q.2 Write a short note on the following:

<b>~</b>	A)	Velocity transducer	05
	B)	I to V converter	05
	C)	Features of Digital Multimeter	04
Q.3	A) B)	What is meant by transducer? Give the factors to be considered for selecting a transducer. Discuss the transducer for the measurement of- 1) Furnace temperature 2) Linear displacement	06 08
Q.4	A) B)	State and brief out the desirable characteristics of Isolation Amplifier. What are the advantages and disadvantages of LVDT? Explain the principle of operation and working of LVDT with a suitable diagram.	06 08
Q.5	A)	Explain the peak detector circuit. Where it is used?	06
	B)	Explain with the circuit diagrams the log and antilog amplifiers	08
Q.6	A)	Give a brief account of a digital frequency Meter	06
	B)	Explain in brief the Hall effect.	08
Q.7	<b>Stat</b> 1) 2) 3)	<b>te and explain the working principle of any TWO of the following:</b> Techometer RMS Converter Proximity Detector	07 07 07

Page **2** of **2** 

Seat No.

#### M.Sc. (Semester – II) (NEW) (CBCS) Examination, 2017 PHYSICS (MATERIAL SCIENCES) CONVENTIONAL AND NON-CONVENTIONAL ENERGY (OET) Day & Date: Friday, 28-04-2017 Max. Marks: 70 Time: 10.30 AM to 01.00 PM **N.B.**: 1) Q no. 1 & Q. no. 2 are **compulsory**. 2) Attempt any three questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks. Choose the correct Answer: Q.1 A) 14 1) Optical fibers work on the principle of a) Refraction b) Dispersion d) Internal reflection c) Scattering Right emitting diodes are fabricated using a) Homojunction silicon b) Homojunction germanium c) Homojunction gallium arsenide d) None of these 3) The band gap of the germanium semiconductor is ev a) 1-21 b) 0.7 c) 0.3 d) 0.5 4) The n type of semi conductor is prepared by doping impurity in either silicon or germanium a) Penta valent b) Trivalent c) Bivalent d) None of these 5) The total energy consumption in India is around from coal. a) 35% b) 40% c) 50% d) 60% 6) Maximum oil is imported by one of the following country. a) India b) USA c) Russia d) Japan 7) The maximum electricity generation in world is from a) Nudean power plants b) Oil d) Coal c) Hydropower 8) Maximum coal production in India is from state. a) West Bengal b) Tamil nadu d) Madhya Pradesh c) Zarkhand 9) The maximum production of electricity from nudean power is in the country

a) USA b) Belgium c) India d) France

		10) The main component of biogas is a) Ethane b) Methane c) Probane d) Buitan	
		<ul> <li>11) The right side top corner of a Hertz sprung-Russell diagram diagram contains.</li> <li>a) Dwarfs b)</li> <li>c) Sun like stars d) Black holes Red-giants</li> </ul>	
		<ul><li>12) Maximum number of moons are observed to a planet</li><li>a)Jupiter b) Uranus c) Neptune d) None of these</li></ul>	
		13) Our sun is a type of star. a) A b) F c) G d) K	
		<ul><li>14) Communication satellite are launched in orbit.</li><li>a) GTO</li><li>b) Polar</li><li>c) Lower ester orbit</li><li>d) None of these</li></ul>	
Q.2	Ans A) B) C)	wer in brief. Convent the given decimal number in actual and binary.(255) <sub>10</sub> . How wind energy is a better source of nonconventional energy. Explain how Aurora occurs.	04 05 05
Q.3	A) B)	Explain the process of modulation. What are the types of modulation? Compare them. Write a note on Bluetooth.	10 04
Q.4	A) B)	Explain the functioning of a Breeder Reactor. How the bio gas plant works? Explain with suitable diagram.	08 06
Q.5	A) B)	How masses, luminosities and temperatures of the stars are related? Give details of H- R diagram. How galaxies are classified?	10 04
Q.6	A) B)	How missiles are classified? Comets.	10 04
Q.7	Writ A) B) C)	<b>te notes on :</b> Uses of radio-active isotopes. Black holes Astrosat	05 05 04

Max. Marks: 70

Seat No.

#### M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 CHEMISTRY INSTRUMENTAL METHODS OF ANALYSIS (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) Attempt in **all five** questions.
  - 2) Section-I is compulsory.
  - 3) Attempt any **two** questions from Section-**II** and **any two** questions from Section –**III**.
  - 4) Answer to **all** questions should be written in same answer book.
  - 5) All question carry **equal** marks.
  - 6) Figures to the right indicate **full** marks.
  - 7) Use of log tables and calculators is allowed.

#### Section – I

#### Q.1 Answer the following

- a) Which is most abundant peak in benzene?
- **b**) Write the wavelength range of finger print region in IR.
- c) Predict the modes of vibration in ethane molecule.
- d) 1-Phenyl ethanol shows the base peak at m/z 107 due to \_\_\_\_\_ion.
- e) Name the factors affecting chemical shift.
- f) What is the nuclear spin value for C<sup>12</sup> and O<sup>16</sup> nuclei?
- g) Name the detectors used in UV-visible spectrophotometer.
- h) What do you mean by base peak?
- i) Define absorbance.
- j) How will you distinguish between cis and trans 1, 3, 5 Hexatrene by UV?
- k) Define coupling constant.
- I) Name the different types of atomizers used in AAS.
- m) What is the function of nebulizer in ICP?
- **n)** Define spin-spin relaxation.

## Section – II

- Q.2 a) Explain the effect of following factors on vibrational frequencies in IR 07 spectroscopy
  - b) Explain the fragmentation pattern in t-butyl alcohol and I-butancol. 07
- Q.3 a) Deduce the structure of an organic compound on the basis of following data: Molecular Formula:  $C_8H_8O_3$ IR -3400, 2900,1740,1600 and 820 cm<sup>-1</sup> NMR(ppm): 3.9 $\delta$ (3H,s), 7.1 $\delta$  (2H,d, J=8Hz), 6.1v  $\delta$  (2H,d, J=8Hz), 4,5 $\delta$ (1H,s)

- **b)** Discuss the construction and working of plasma torch.
- **Q.4 a)** With the help of Woodward and Fieser's rules Calculate the max values for following compounds.



**b)** What is the basic principle of AAS? Explain the difference types of **07** interference in AAS.

#### Section – III

Q.5	a)	Explain TMS is used as internal standard in PMR spectroscopy.	05
	b)	Explain in brief Photomultiplier.	05
	c)	Explain in the brief shielding effect.	04
Q.6	a)	Explain in brief anisotropic effect.	05
	b)	Discuss in brief FT-NMR.	05
	c)	Describe fragmentation pattern of ethyl benzene.	04
Q.7	Wri a) b) c) d)	te a notes (any three): Applications of ICP-AES Spin-spin coupling Applications of IR Spectroscopy McLafferty rearrangements	14

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Seat No.

# M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 **ENVIRONMENTAL SCIENCE**

#### ANALYTICAL TECHNIQUES AND INSTRUMENTATION (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Answer any five questions.

- 2) All questions carry equal marks.
- 3) Question 1 is compulsory.
- 4) Answer any two from Q.No.2, 3, 4.
- 5) Answer any two from Q.No.5, 6, 7.

#### Q.1 Select the answer among the following:

- 1) Difference in electrical potential between an electrode and a reference electrode is measured by using \_\_\_\_\_
  - a) Electrical Conductivity Meter b) Potentiometer d) None of these
  - c) pH Meter
- 2) Turbidity in water is considered as \_\_\_\_\_ types of perameter. b) Chemical Parameter a) Biological Parameter
  - c) Physical Parameter
- 3) In GC-MS the column provides a surface for the components in the sample interacts is known as \_\_\_\_\_
  - a) Stationery phase c) interactive phase

b) Mobile phase

d) None of these

d) None of these

d) All of these

- Geiger Muller counters are used to detect radioactive emission, most commonly \_\_\_\_\_ and \_\_\_\_\_ rays. b) Beta and Gamma rays
  - a) Alfa and Beta rays
  - c) Alfa and Gamma rays
- 5) Detection of metals and non-metals at ppq range is detected by using
  - a) ICPS c) GC-MS

- b) AAS
- d) UV spectrophotometer

b) Eyepiece Lens

- 6) Piece of light microscope that gather and focuses light on specimen being viewed is known as
  - a) Objective Lance
  - c) Condenser Lens
- d) Coarse Focus
- 7) In reverse phase HPLC a) A hydrophobic stationary phase is combined with a polar mobile phase
  - b) A hydrophilic stationary phase is combined with a polar mobile phase
  - c) A hydrophilic stationary phase is combined with a non-polar mobile phase
  - d) A hydrophobic stationary phase is combined with a non-polar mobile phase.

Max. Marks: 70

- 8) X-ray different fails to detect the presence of substances
  - a) Comprising less than 5 percent of a mixture
  - b) Containing a magnetic field
  - c) Comprising elements with two or more isotopes
  - d) Containing a high concentration of a carbon

	<ul> <li>9) method is used for the quantitation</li> <li>a) Turbidometric Method</li> <li>c) Gravimetric Method</li> </ul>	ative determination. b) Titrimetric Method d) None of these	
	<ul> <li>10) system is used for the remove industrial exhaust streams.</li> <li>a) Electrostatic precipitator</li> <li>c) Wet Scrubber</li> </ul>	val of particulate matter from b) Bag filters d) All of these	
	<ul> <li>11) Which of the following is not a step in</li> <li>a) Calibration curve is constructed</li> <li>b) Atoms absorb light</li> <li>c) Particles are absorbed onto a static</li> <li>d) A solution is vaporized</li> </ul>	atomic absorption spectroscopy?	
	<ul><li>12) Which of the following is a cytoplasmi</li><li>a) Eosin</li><li>b) Crystal Violet</li></ul>	c Stain c) Carmine d) Orcein	
	<ul> <li>13) What is shielding in NMR</li> <li>a) Using a curved piece of metal to block</li> <li>b) Putting metal around an Rf source.</li> <li>c) Magnetic moment is blocks the full surrounding nuclei.</li> <li>d) Blocking parts of a molecule from F</li> </ul>	ock an opponent's attack. induced magnetic field from Rf radiation	
Q.2	<ul> <li>14) Electrostatic Precipitators are fully furindustry</li> <li>a) Dairy Industry</li> <li>c) Thermal Power Plants</li> <li>Define conductance of solution. Explain of add a note on factors affecting conductance</li> </ul>	<ul> <li>b) Pharmaceutical Industry</li> <li>d) Tanneries</li> <li>calibration of conductivity meter and ice of solution.</li> </ul>	14
Q.3	Explain with help of schematic diagram the spectrophotometer. Elaborate its advanta spectrophotometer.	e operations of a double beam UV ges over single beam	14
Q.4	What is Mass Spectroscopy? Describe ro spectrometer detectors.	le and different types of mass	14
Q.5	Write short notes on the following: a) Gel Electrophoresis b) Working of Flame Photometer		14
Q.6	Write a brief with suitable illustration of a) Role of RFLPs in DNA Fingerprinting b) Need of reference electrode in pH met	on the following: ter	14
Q.7	Write an account on the following: a) Working of Light Microscope b) Turbidity Meter		14

Max. Marks: 70

Seat	
No.	

## M.Sc.(Semester – II) (New) (CBCS) Examination, 2017 MATHEMATICS

## FUNDAMENTAL IN MATHEMATICS (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

- N.B.: 1) Attempt five questions.
  - 2) Q no. 1 & Q. no. 2 are compulsory.
  - 3) Attempt any three questions from Q. no. 3 to Q. no. 7.
  - 4) Figures to the **right** indicate **full** marks.

# Q.1 A) Choose the correct Answer: 1) Vector space is defined over a \_\_\_\_\_

07

a) Group b) Ring c) Field d) None of these

#### 2) A subset of Linearly independent vectors is \_\_\_\_\_.

- a) Linearly dependent
- b) Linearly independent
- c) May or may not be linear dependent
- d) None of these
- 3) If T:  $v \rightarrow V$  is the identity map, then Rank T = \_\_\_\_\_. a) 0 b) 1 c) 2 d) dim V
- 5) If A is a square matrix of order 4 with rank 2 & B is a square matrix of order 4 whose rank is 4 then the rank of AB \_\_\_\_\_ is a) 1 b) 2 c) 3 d) 4

## 6) If dim V=n then the number of vectors in a basis of V is \_\_\_\_.

- a) Less than n b) Equal to n
- c) Greater than n d) None of these
- 7) If T : V(F) → W(F) is a linear map & V is finite dimensional, then Rank (T) = \_\_\_\_\_.
  - a) dim V + nullity (T)
- b) dim V nullity (T)
- c) nullity (T) dim V d) nullity (T)

## B) State whether true or false.

- 1) Any system of linear equations has at least one solution.
- 2) The rank of n x n matrix is at most n.
- 3) An elementary matrix is always square.
- 4) The zero vector space has no basis.
- 5) The dimension of  $f_n(F)$  is n.

- 6) A vector space may have more than one zero vector.7) The empty set is linearly dependent.

Q.2	A)	Find the rank of matrix A = $\begin{bmatrix} 2 & 1 & 1 \\ 4 & 2 & 2 \\ 1 & 2 & 2 \end{bmatrix}$	03
	B) C)	Show that the inverse of matrix is unique. Show that T: $R^2 \rightarrow R^2$ by defined T( $a_1, a_2$ ) = ( $a_1, -a_2$ ) T is linear transformation	04 04
	D)	Define Basis & Dimension of vector space.	03
Q.3	A)	Prove that any Intersection of subspace of vector space is	07
	В)	Show that the following system of equation is consistent & find its solution. $x_1 - x_2 + x_3 = 2$ $3x_1 - x_2 + 2x_3 = -6$ $3x_1 + x_2 + x_3 = -18$	07
Q.4	A)	Prove that If a vector space V is generated by a finite set S then	08
	B)	some subset of S is basis for V Hence V has a finite basis. Determine whether or not the following vectors form a basis of $\mathbb{R}^3$ . 1) (1, 1, 2), (1, 2, 5), (5, 3, 4) 2) (1, 2, 1), (2, 9, 0), (3, 3, 4)	06
Q.5	A) B)	State & prove Rank-Nullity theorem. Prove that: If V be vector space & $S_1 \subseteq S_2 \subseteq V \& S_1$ is Linearly dependent then $S_2$ is linearly dependent.	08 06
Q.6	A)	Show that T: $R^2 \rightarrow R^2$ defined by $T(a_1, a_2) = (a_1 + a_2, a_1)$ is both	07
	B)	Explain the properties of Determinants with example.	07
Q.7	A)	Define Elementary matrix & explain elementary matrix	06
	B)	Define T : $R^2 \rightarrow R^3$ by T(a <sub>1</sub> , a <sub>2</sub> ) = [a <sub>1</sub> , + 3a <sub>2</sub> , 0, 2a <sub>1</sub> - 4a <sub>2</sub> ] U : $R^2 \rightarrow R^3$ by U (a <sub>1</sub> , a <sub>2</sub> ) = [a <sub>1</sub> - a <sub>2</sub> , 2a <sub>1</sub> , 3a <sub>1</sub> + 2a <sub>2</sub> ] Consider $\beta \& \gamma$ be the ordered basis for $R^2 \& R^3$ respectively then show that 1) $[T + U]^{\gamma}_{\beta} = [T]^{\gamma}_{\beta} + [U]^{\gamma}_{\beta}$ 2) $[\alpha T]^{\gamma}_{\beta} = \alpha [T]^{\gamma}_{\beta}$	08

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# SLR-OET-13

Seat	
No.	

# M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 STATISTICS

#### STATISTICAL METHODS (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

**N.B.**: 1) Attempt five questions.

2) Q no. 1 & Q. no. 2 are compulsory.

3) Attempt any three questions from Q. no. 3 to Q. no. 7

4) Figures to the **right** indicate full **marks**.

5) Non-programmable /simple calculator is allowed.

## Q.1 A) Choose the correct Answer:

1) If 25% of the items are less than 30 and 25% items are more than 70 then quartile deviation is \_\_\_\_\_\_
a) 20
b) 30
c) 40
d) 50

- To compare consistency of observations among two data sets, we can use \_\_\_\_\_ as most efficient measure of dispersion.
  - a) rangb) mean deviationc) quartile deviationd) coefficient of variation
- 3) If two regression coefficients are  $-\frac{1}{4}$  and -1 then correlation coefficient r is \_\_\_\_\_ a)  $-\frac{1}{4}$  b)  $\frac{1}{4}$  c)  $-\frac{1}{2}$  d)  $\frac{1}{2}$
- 4) The range of Spearman's rank correlation is \_\_\_\_\_ a)  $-\infty$  to  $\infty$  b) -1 to 1 c) 0 to 1 d) 0 to  $\infty$
- 5) If correlation coefficient between X and Y is 0.8 then the correlation coefficient between –X and –Y is \_\_\_\_\_\_ a) 0.4 b) 0.8 c) 0.4 d) 0.64
- 6) If a constant value 20 is subtracted from each observation of a set, then arithmetic mean of set is \_\_\_\_\_

a) non affected

b) increased by 20

c) decreased by 20 d) 20 times the original value

7) If the arithmetic mean of two observation is 6.5 and geometric mean is 6 then two observation are\_\_\_\_\_\_
a) 9, 6
b) 8, 5
c) 7, 6
d) 4, 9

Max. Marks: 70

		8)	If a perf both the	ect coin is head is _	s tossed twi	ce then pro	bability of	getting	
			a) <sup>1</sup> / <sub>2</sub>	b	$\frac{1}{8}$	C) $\frac{1}{4}$	C	d) $\frac{3}{4}$	
		9)	If X follo	ows binom	ial distribut	on with pa	rameters n	and p	
			a) mea c) mea	n = varian n > varian	ce	b) me d) nor	an < variar ne of these	ice	
		10)	For te which o a) $\alpha =$ c) $\alpha =$	sting simp f the follov 0.05 and $\beta$ 0.10 and $\beta$	ble hypothes wing values S = 0.80 S = 0.70	sis against of $\alpha$ and $\beta$ b) $\alpha$ = d) $\alpha$ =	a simple a is not corr $0.05$ and $\mu$ $0.5$ and $\beta$	ternative, rect? 3 = 0.98 = 0.5	
	B)	Sta 1) F 2) N 7 3) F 4) F	ate whe For Berr Nonpara egardin For norn Rejectin error.	ther true noulli distri metric tes g the form nal distribu g null hypo	or false. bution mea at does not r of the popu ution, mean othesis whe	n is always nake any a ulation. = median n it is actu	s less than assumption = mode. ally true is	variance.	04
Q.2	A)	<b>An</b> 1) 2)	<b>swer th</b> Define If X has Find P	<b>e followi</b> the terms s Poisson (X=0), me	n <b>g:</b> Arithmetic distribution an and varia	mean, Meo such that ance.	dian and m P(X=1) = 2	ode. P (X=2).	06
	B)	<b>Wr</b> 1) 2)	<b>ite sho</b> Additior Run tes	r <b>t notes o</b> n and Mult t	n following iplication ru	<b>].</b> les of prob	ability		08
Q.3	A)	Wh De	nat is dis fine 1) \$ 2) ( 3) (	spersion? Standard o Quartile de Coefficien	deviation eviation t of variatior	٦			07
	B)	The N st	e marks Marks udents	of 25 stud 0-10 3	dents are gi 10-20 4	ven below 20-30 10	30-40	40-50	07
		Ca of r	lculate t mean, n	he missin nedian and	g frequency d mode.	and henc	e obtain the	e values	

Q.4 A) Define Karl Pearson's correlation coefficient and regression 07 coefficients. State the relation between correlation coefficient and regression coefficients. If sign of one regression coefficient is known, how will you decide the sign of correlation coefficient and other regression coefficient?

**B)** Following data gives price and demand of a commodity in 10 **07** days.

Price	2	5	4	8	10	9	5	6	7	4
Demand	8	6	7	3	2	4	5	3	2	10

Find the Karl Pearson's coefficient of correlation between price and demand and interpret the result.

Q.5 A) Define probability mass function of random variable X. A
 O7 discrete random variable X has the following probability distribution.

Х	-2	-1	0	1	2	3
P(X=x)	0.1	k	0.2	2k	0.3	3k

1) Find the value of k.

- 2) Evaluate  $P(X \ge 2)$  and P(-2 < X < 2).
- B) Define binomial distribution with parameters n and p. If X is a 07 binomial variate with n=5 and p=0.3, Find 1) P(X=3)
  - 2) P(X<3)
- Q.6 A) Define exponential distribution with parameter λ. Suppose 07 lifetime of automobile batteries is exponentially distributed with mean 1000 days. What is the probability that such a battery will last more than 1200 days?
  - **B)** Describe the sign test for testing that the population median is  $M_0$  against the alternative that the median is  $M_1 > M_0$
- Q.7 A) Describe a large sample test procedure for testing the proportion P in the population has specified value P<sub>0</sub>. In a hospital, 138 female and 162 male babies were born in a week. At 5% level of significance, does these figures confirm to the hypothesis that male and female babies born in equal proportion?
  - B) Following data shows the performance of two batsmen A and 07B.

	Batsman A	Batsman B
Number if innings	50	40
Mean runs	55	50
Standard deviation	8	10

Which batsman is more consistent in score? Which batsman is better in scoring the runs?

Seat	
No.	

#### M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 GEOINFORMATICS CLIMATOLOGY (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

**N.B.**: 1) Attempt in all five questions.

2) Q.1 is compulsory.

3) Attempt any two from Q. No. 2, 3 and 4.

4) Attempt any two from Q. No. 5, 6 and 7.

5) All question carry equal marks.

#### Select the answer among the following: Q.1

- 1) Average weather conditions in given place over longer period of time are called
  - b) Atmosphere c) Weather a) Season d) Climate

Tertiary circulation of atmospheric wind system includes \_\_\_\_\_.

- a) Local Winds
- c) Polar Easterlies

In southeast Asia, North-easterly winds are known as \_\_\_\_\_.

- a) Winter Monsoon
  - b) Summer Monsoon

b) Trade winds

d) Cyclones

- c) Both (A) and (B)
- d) None of this
- 4) The circulation of water from one part of the general earth system to another is known as
  - a) Bio-Geochemical Cycle
- b) Hydrogen Cycle
- c) Hydrological Cycle
- d) All the above
- 5) The weight of the water vapour per volume of air is called as \_\_\_\_\_.
  - a) Absolute Humidity b) Specific Humidity c) Relative Humidity
    - d) Mixing Ratio

#### 6) The weight of water vapour per unit weight of dry air and not the moist air is called as \_\_\_\_\_.

- a) Absolute Humidity
- c) Relative Humidity

- b) Specific Humidity
- d) Mixing Ratio
- 7) \_\_\_\_\_ is the process of water vapour changing to the liquid state.
  - a) Evaporation b) Condensation c) Precipitation
    - d) All the above
- 8) The precipitation of liquid water particles, either in the form of drops of more than 0.5 mm diameter is called as \_\_\_\_\_
  - c) Snow a) Rain b) Drizzel d) All the above

Max. Marks: 70

	<ul> <li>9) is/are the factors involved in ca</li> <li>a) Latitude</li> <li>c) Frontal Activity</li> </ul>	ausing precipitation. b) Temperature d) All the above	
	<ul> <li>10) The Tropical Cyclones of hurricane fo are known as</li> <li>a) Thunderstorm</li> <li>c) Tornadoes</li> </ul>	rce in the western North Pacific b) Typhoons d) All the above	
	<ul><li>11) In Philippine Islands typhoons is know</li><li>a) Baguio</li><li>b) Willy-Willy</li></ul>	n as c) Taifu d) Cyclones	
	<ul><li>12) The storms produced by cumulonimbut accompanied by lightning and thunder</li><li>a) Thunderstorm</li><li>c) Tornadoes</li></ul>	us cloud and always <sup>-</sup> is known as b) Typhoons d) Hurricanes	
	13) A broad trough of low pressure in equ	atorial latitudes is known as	
	a) Coriolis force b) ITCZ c) Jet stream d) Centripe	etal force	
	14) is the rainiest station in India a) Shillong b) Mumbai	c) Chennai d) Kolkata	
Q.2	Explain in brief scales of Atmosperical Mo	tion?	14
Q.3	Define Humidity? Discuss their types and Exchange.	add a note on Moisture	14
Q.4	What is Thunderstorm? Describe the origi Thunderstorm. Add a note on Regional Di	n, Structure and stages of stribution.	14
Q.5	<ul><li>Write short notes on:</li><li>a) Nature and scope of Climatology</li><li>b) Precipitation</li></ul>		14
Q.6	<ul><li>Explain a brief on:</li><li>a) Environmental Impact of Severe Weath</li><li>b) Classification of Clouds</li></ul>	ner	14
Q.7	<ul><li>Write an account on:</li><li>a) Cyclone and Anticyclone</li><li>b) Seasonal changes in India</li></ul>		14

#### Seat No.

#### M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 APPLIED GEOLOGY WATERSHED MANAGEMENT (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Answer any five questions.

- 2) All questions carry equal marks.
- 3) Question 1 is compulsory
- 4) Answer any two essay question from 2, 3, 4.
- 5) Answer any two short note questions from 5, 6, 7.
- 6) Draw neat and labeled diagrams wherever necessary.

#### Fill in the blanks with correct answer: Q.1

- 1) If a whole of topsoil is washed down, erosion is said to be
  - a) sheet erosion
  - c) gully erosion

- b) shelter wash off
- d) wind erosion
- 2) \_\_\_\_\_ occurs under normal conditions:
  - a) Geological erosion
  - c) Both (a) and (b)

- b) Surface creep
- d) Accelerated erosion

## 3) Bunds, dams and drains are constructed to prevent

- a) Stream bank erosion b) Sheet erosion
- c) Slip erosion
- d) Gully erosion
- 4) \_\_\_\_\_ is the upper surface of the zone of saturation b) hydroequalization gradient
  - a) Water line
  - d) water table c) aquatic differentiation margin
- 5) Terracing is an effective method of soil conservation:
  - a) Desert areas c) Plains

- b) Hilly areas d) Riverine areas
- 6) Soil conservation means:
  - a) Prevention of spread of desert
  - b) To check soil erosion by wind and rains
  - c) To check soil erosion by afforestation
  - d) All of these

## 7) Deforestation may reduce the chances of:

- a) Rain fall b) Frequent cyclones c) Erosion of surface soil d) Frequent landslides
- 8) Managing watershed in forest area is/ are:
  - a) Practices for soil protection and flood control
  - b) Practices for decreasing water yield
  - c) Collection of steam orders
  - d) None of these

Max. Marks: 70

- 9) Stream flow or discharges means:
  - a) It is quality of water flowing in the stream or channel
  - b) Quality, quality and timing of water yields are mostly affected by man
  - c) Both (a) and (b)
  - d) None of these
- 10) \_\_\_\_\_ is the total length of all the streams and rivers in a drainage basin divided by the total area of the drainage basin
  - a) Bifercation ration

b) Drainage density

c) Stream frequency

- d) Drainage intensity
- 11) Watershed management is:
  - a) The management of watershed area to achieve certain objectives of management
  - b) The objective can be conservation of soil and water, regulation of stream flow regime, flood control, reduction of sediment, ground water recharge etc.
  - c) Both (a) and (b)
  - d) None of these
- 12) If the same crop is repeatedly grown in a field:
  - a) Nitrogen starvation many result
  - b) Specific mineral deficiency may arise
  - c) Soil will become prone to diseases
  - d) Water level in soil will recede
- 13) If the amount of discharge in an aquifer exceeds the amount of recharge, the groundwater table \_\_\_\_\_.
  - a) will rise b) will drop
  - c) will remain the same d) may rise or drop depending on the porosity
- 14) \_\_\_\_\_ factor will not affect the runoff
  - a) Shape of the watershed b) Rainfall intensity
  - c) wind direction d) topography

Q.2	What is Watershed? Describe the watershed development plans	14
Q.3	Discuss soil erosion. Explain the factors which affect the soil erosion?	14
Q.4	Write a note on soil and water conservation measures.	14
Q.5	Write short notes on: a) Objectives of watershed management b) Design of simple bund structure	14
Q.6	Explain in short a) Land capability classification b) factors affecting runoff	14
Q.7	<b>Write note on</b> a) Rainfall pattern in India b) USLE	14

Seat No.

#### M.Sc.(Semester – II) (New) (CBCS) Examination, 2017 COMPUTER SCIENCE OFFICE AUTOMATION (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) Q no. 1 & Q. no. 2 are compulsory.
  - 2) Attempt any three questions from Q. no. 3 to Q. no. 73) Figures to the right indicate full marks.

#### Q.1 A) Choose the correct Answer:

10

- 1) With which of the following all formulas in excel starts?
  a) / b) \* c) \$ d) =
- 2) What term describes explanatory text attached to a cell?a) Contextb) Calloutc) Commentd) Dialog

#### 3) Which of these will not select all the cells in a document?

- a) Using the Edit select All menu
- b) Pressing Ctrl + A on the keyboard
- c) Clicking three times with the right mouse button in the spreadsheet
- d) None of these
- 4) What is the smallest and largest font size available in Font Size tool on formatting toolbar?
  - a) 8 and 72 b) 8 and 68
  - c) 6 and 72 d) 6 and 68
- 5) MS-WORD automatically moves the text to the next line when it reaches the right edge of the screen and is called?
  - a) Carriage Return b) Enter
  - c) Word wrap d) None of these
- 6) Where can you find the horizontal split bar on MS Word screen?
  - a) On the left of horizontal scroll bar
  - b) On the right of horizontal scroll bar
  - c) On the top of vertical scroll bar
  - d) On the bottom of vertical scroll bar
- 7) Which of the following helps to reduce spelling error in the document?
  - a) Auto Format b) Auto Correct
  - c) Smart Tags d) AutoText

		8) Where can you find the Master view on MS-Power point screen?	
		a) View b) Animation c) Design d) Layout	
		<ul> <li>9) Which among following first generation of computers had?</li> <li>a) Micro processor</li> <li>b) Vacuum Tubes and Magnetic Drum</li> <li>c) IC chips</li> <li>d) All of above</li> </ul>	
		<ul> <li>10) If the displayed system time and data is wrong, you can reset it using</li> <li>a) Control panel</li> <li>b) MS Word</li> <li>c) Toolbar</li> <li>d) Desktop panel</li> </ul>	
	B)	<ul> <li>Fill in the blanks.</li> <li>1)shortcut key for add new slide below current slide in MS-Power point.</li> <li>2) MS Access is Software.</li> <li>3) Start / Restart the computer is called</li> <li>4)shortcuts key for find and replace the query text from text document.</li> </ul>	04
Q.2	A)	<ul><li>Attempt the following.</li><li>1) Explain the importance and use of My Documents.</li><li>2) How to use Formula Auditing in MS-Excel? Explain with example.</li></ul>	08
	B)	Write a short note on : 1) Print Preview 2) Recycle Bin	06
Q.3	A) B)	What is desktop icon? Explain three icon with their function. What is Computer? Explain its characteristics.	07 07
Q.4	A)	What is the use of mail merge? Explain detail process of mail	07
	B)	merge. What is the use of table in MS word? Explain the process of adding formula in table.	07
Q.5	A) B)	What is MS excel? Explain its application. Describe pivot table in MS excel with a suitable example.	07 07
Q.6	A)	What are different method of setting presentation style in MS	07
	B)	What is a MS power point? Describe use of MS power point in education with an example.	07
Q.7	A)	Describe the detail process of importing and exporting data	07
	B)	Describe the "form" in MS access and any two operations with a suitable example.	07

Seat No.

#### M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 **COMPUTER SCIENCE** LINUX OPERATING SYSTEM (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

d) sort

d) gzip

10

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) Q no. 1 & Q. no. 2 are compulsory.
  - 2) Attempt any three questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks.

#### Choose the correct Answer: Q.1 A) 1) Which of the following command is use to see the services running in NFS server. b) serverinfo c) NFSinfo a) rpcinfo d) All of above Which command is used to sort the lines of data in a file in a reverse order? a) st c) sh b) sort-r 3) Which command reduces the size of a file? a) pzip b) gcatc c) pgcat

- The head command writes the first lines of a file to screen.
  - a) Five b) Twenty c) Ten d) Fifteen
- 5) Effective user id can be set using following permission. a) 0777 b) 2666 c) 4744 d) None of above
- 6) How many links are created when we create a directory file? a) 1 b) 2 c) 3 d) 4
- 7) Which command is used to change permission of files and directory? a) mv b) chgrp c) chmod d) set
- 8) In the shell by default, all variables are considered stored as. a) String b) Integer c) Charcter d) Float
- 9) Which command is used to close the vi editior? a) q b) wq c) both a & b d) all of above
- 10) Which of the following below are true functionalities of shell?
  - a) Authenticates user
- b) Interprets command
- c) Only a and b d) All of above

	B)	<ul> <li>State whether true or false.</li> <li>1) Grep command is used to count number of character in a file.</li> <li>2) In kernel signals are used to notify a process of certain faults.</li> <li>3) Linux is an open source operating system and the source code is shared.</li> <li>4) pwd command displays password file content.</li> </ul>	04
Q.2	<b>A)</b>	<b>Write short note on following.</b> 1) Samba. 2) Vi-editor	08
	B)	Answer the following. <ol> <li>Discuss the importance of kernel in Linux system.</li> <li>Explain the advantages of Linux operating system.</li> </ol>	06
Q.3	Ansv A) B)	<b>ver the following.</b> How can you run x-client on a remote machine? Explain the file system of Linux operating system.	07 07
Q.4	Ansv A) B)	<b>ver the following.</b> List the various permission used for files and directories? Explain in detail. What is DHCP? Explain with an example.	07
Q.5	Ansv A) B)	<b>ver the following.</b> Explain how packages are installed and removed in Linux. Write steps involved in booting of Linux loader.	07 07
Q.6	Ansv A) B)	<b>wer the following.</b> What is the purpose of Shell? Explain different types of shell. Discuss the communication facilities in Linux operating system.	07 07
Q.7	Ansv A) B)	<b>ver the following.</b> State and explain the concept of DNS for Linux system. Explain in detail about common Unix printing system.	07 07

Seat
No.

			M.Sc. (Semeste	r – II) (New) (C ZOOLO	CBCS) Exami GY	nation, 2017	
			COMF	UTATIONAL B	BIOLOGY (OE	ET)	
Day	& Da	te: F	riday, 28-04-2017	7		Max. Marks: 70	
Time	e: 10.	30 A	M to 01.00 PM				
In	struc	tions	s: : 1) <b>Q.1, 2, 3</b> a 2) Answer <b>an</b>	re compulsory. <b>y two</b> from Q.3,	4 & 5.		
Q.1	A)	<b>M</b> ı 1)	ultiple choice que is define arranged in orde	estions (per qued as the value of r of their magnit	<b>estion 2 mark</b> s If the middle ob ude.	s) servations when	14
			a) Median	b) Mean	c) Mode	d) Variance	
		2)	If we divide the c division are calle	distribution into 1	00 equal parts	, the points of	
			a) Quartile	b) Percentile	c) Decile	d) Pentile	
		3)	The diagrams of corresponding fr a) Polygon c) Frequency cu	otained by taking equencies along rve	g classes on X a g Y axis is calle b) Histogr d) Ogive o	axis and d am curve	
		4)	Coefficient of co a) -1 to +1	rrelation lies with b) 0 to 1	nin c) -1 to 0	d) 0.1 to 1.0	
		5)	Hb% of an anima the median Hb% a) 4gms/100ml c) 6gms/100ml	al was recorded is	as 6,7,4,5,5,3, b) 5gms/1 d) 7gms/1	4 grams/100ml. then 00ml 00ml	
		6)	The table giving as a) Mean b) Fr	the frequencies equency	for different cla c) Median	ass interval is known d) Bivariate table	
		7)	tal Arithmetic mean a) 15.75	of 12,16,18,20, b) 16.50	18,16,14,12 c) 14.5	d) 16.75	
Q.2	Lor Des	<b>ng a</b> scrib	nswer type ques e Measures of ce	<b>tion (compulso</b> ntral tendency w	<b>ry):</b> ⁄ith formulas		14
Q.3	Ans A) B)	swe co St	r the following: efficient of variation udent t-test	on			07 07

Q.4	Exp A) B) C)	<b>lain the following:</b> Chi-square test Probability Rank correlation	05 05 04
Q.5	Exp A) B)	<b>lain in short:</b> ANOVA Null Hypothesis	07 07
Q.6	Writ A) B) C) D) E) F)	e short notes on any four of the following: Normal Distribution Scatter diagram Range Standard Deviation Quartile deviation Regression	14

Page **2** of **2** 

Max. Marks: 70

No.

M.Sc. (Semester – II) (CBCS) (New) Examination, 2017 ZOOLOGY

**RESEARCH METHODOLOGY AND 4 INTELLECTUAL PROPERTY RIGHT (OET)** 

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

**N.B.**: 1) Q no. 1 & Q. no.2, 6 are compulsory.

2) Attempt any two questions from Q. no. 3, 4 and 5.

#### Q.1 A) Choose the correct Answer:

- 1) In case of ANOVA, what is SSW?
  - a) The variance caused by the treatments.
  - b) The variance caused by the difference within the subjects
  - c) Total variance caused by the extraneous factors
  - d) Total variance between the groups.
- 2) What are the functions of statistical analysis?
  - a) Explanation of results
- b) Presentation of data d) None of these
- c) Both of them
- The case study is the study of a
  - a) Single group
  - b) Single individual
  - c) Single community or family
  - d) Single unit done intensively to bring out the processes and dynamics underlying its problems and functioning.
- 4) When the questions are presented to the respondents in a face-to-face situation, and the interviewer rather than the subjects, fills out the query, it is called
  - a) An Inventory
- b) A Questionnaire d) A Test
- c) A Schedule

## 5) What is the meaning of Null Hypothesis?

- a) Difference between two parametric mean is zero
- b) The difference is due error in sampling
- c) Both of them
- d) None of these
- 6) Which of types of correlation are used in educational research?
  - a) Co-efficient correlation
  - b) Partial correlation
  - c) Multiple cumulative correlations
  - d) All of these

Seat

		<ul> <li>7) What does randomization ensure in experimental research?</li> <li>a) Uniformity of the groups</li> <li>b) Similarity of the groups.</li> <li>c) Uniformity and similarity of the groups.</li> <li>d) Uniformity, similarity and equalization of the groups.</li> </ul>	
Q.2	Desc	ribe in detail the structure and components of thesis.	14
Q.3	Ansv A) B)	<b>wer the following.</b> Give and account on collection of samples. Funding agencies.	07 07
Q.4	Expl A) B) C)	<b>ain the following.</b> Uses of SPSS. Impact factors ant its importance. Tests of signifance.	05 05 04
Q.5	Expl A) B)	ain in short: Any two search engines, with their application. Give an account on materials and methods.	07 07
Q.6	Write A) B) C) D) E) F)	e short notes (any four): Science citation index Note on collection of Literature Intellectual Property Right Use of Inflibnet in research work. Copyright ISSN	14

Page **2** of **2** 

Max. Marks: 70

#### Seat No.

# M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 **GENETICS**

#### PLANT BREEDING AND TISSUE CULTURE (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

- N.B. : 1) Section I is compulsory.
  - 2) From section II attempt any four.
  - 3) All question carry equal marks.
  - 4) Figures to right indicate full marks.
  - 5) Draw neat and labeled diagrams.

#### Section-I

#### Q.1 A) Choose correct answer from given alternatives.

- 1) The quickest method of crop improvement is b) Selection
  - a) Introduction
  - c) Hybridization
- 2) A new crop Raphanobrassica is cross between
  - a) Radish and cabbage
- b) Radish and Wheat

- c) Radish and Rve
- d) Wheat and cabbage

d) Mutation breeding

- 3) \_\_\_\_\_ demonstrated first time the recovery of protoplasts through enzymatic degradation of cell walls.
  - a) E. C. Cockinng (1960)
  - c) A. Fleming (1929)
- b) J. M. Nelson (1916) d) K. J. Kasha (1973)

d) All of the above

d) Transposons

- 4) Transgenic plants can be used as a mean of b) Biosynthesis
  - a) Biodegradation
  - c) Biopesticides
- 5) The directed desirable gene transfer from one organism to other and the subsequent expression of the gene is referred is \_\_\_\_\_. b) Transgenosis
  - a) Transgenomics
  - c) Transgenics
- 6) In protoplast isolation \_\_\_\_\_ enzyme is commonly used. b) Cellulose c) Nuclease a) Amylase d) Lipase
- 7) In hybridization the parents used are the two individuals of the same variety is called as
  - a) Intravarietal hybridization
- c) Interspecific hybridization
- b) Intervarietal hybridization
- d) Intergeneric hybridization

# B) Answer the following terms.1) What is mutation breeding?

- 2) Define mass selection.
- 3) What is hetrosis?
- 4) What is edible vaccine?

- 5) What is cryopreservation?6) What is bulk method?7) Law of homologous variation.

#### Section – II

Q.2	Describe the breeding methods in self pollinated crops. Add note on its merits and demerits.	14
Q.3	Give an account on cryopreservation.	14
Q.4	Describe use of somaclonal and gametoclonal variation for crop improvement.	14
Q.5	<ul> <li>Answer any two of the following:</li> <li>1) Describe role of molecular marker in stress resistance breeding.</li> <li>2) Give an account on artificial seeds.</li> <li>3) Describe meristem culture.</li> </ul>	14
Q.6	<ul> <li>Answer any TWO of the following</li> <li>1) Describe in details protoplast culture and fusion.</li> <li>2) Give an account on Preservation of plant germ plasmin-vitro.</li> <li>3) Describe GM crops for nutritional quality and quantity.</li> </ul>	14

07

Max. Marks: 70

Seat No.

## M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 GENETICS

#### COMPUTATIONAL STRUCTURE BIOLOGY AND DRUG DESIGNING (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) **Part-I**, Question 1 is **compulsory**.
  - 2) Attempt any four questions from Part II.
    - 3) Figures to the **right** indicate full **marks**.
  - 4) Answer to the Part-I and Part-II are to be written in same answer Booklet only.

Part-I

- Q.1 A) Rewrite the sentence after choosing the correct answer from the 07 given alternatives
  - Homology modeling is also called as \_\_\_\_\_ modeling.
     a) Comparative b) Secondary c) Primary d) Domain
  - 2) Proteomics is the study of \_\_\_\_\_
    - a) Set of proteins in a specific region of the cell b) Set of proteins
    - c) Entire set of expressed proteins in a cell d) None of these
  - 3) Model can be evaluating by \_\_\_\_\_.
     a) Procheck b) ANOLEA c) WHAT IF d) All of these
  - 4) Protein-Protein interaction prediction database are \_\_\_\_\_.
    a) DIP b) MINT c) STRING d) All of these
  - 5) \_\_\_\_\_ is the method used to design the drug using the knowledge of 3D structure of protein.
    - a) Ligand based drug design b) Structure based drug design
    - c) Both a and b d) None of these
  - 6) \_\_\_\_\_ is visualization tool which does not recognize PDB format. a) Cn3D b) RasMol c) RasTop d) PyMol
  - 7) Molecular chemical structures can be designed using \_\_\_\_\_ tools.
    - a) ACD Lab

b) Chem sketch

c) KEGG draw

d) All of the above

#### B) Definitions:

- 1) Prodrug
- 2) RCSB PDB
- 3) CYP450
- 4) SCOP
- 5) HTS
- 6) Domain
- 7) Lectin

#### Answer any four of the following: Q.2 What is yeast two hybrid system? Explain the mechanism of yeast two 14 hybrid system for predicting Protein-Protein interaction. Explain the Homology modeling with its step in details and Give a detail 14 Q.3 account on different programmers for the homology modeling. Explain the 3D structure prediction and explain fold recognition and 14 Q.4 threading method in details. Answer any two of the following 14 Q.5 a) Write a note on combinatorial chemistry. b) What is structural bioinformatics? Explain the RCSB PDB and mmCIF file format in details. c) Explain in detail the different phases of clinical trials. Write short notes on (any two): 14 Q.6 a) CATH and SCOP **b)** Drug Bank c) Protein-carbohydrate interaction

#### Part – II

#### Seat No.

#### M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 BIOTECHNOLOGY IMMUNOLOGY AND IMMUNO TECHNIQUES (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

07

Time: 10.30 AM to 01.00 PM

N.B. :	1) All question of <b>Section I</b> are <b>compulsory</b> .
	2) Answer any four questions from Section II.

## Section I

# Q.1 A) Choose the correct alternative and rewrite the sentences:

Blood borne antigens are mainly trapped in \_\_\_\_\_.
 a) Spleen b) Lymhnode c) Bone marrow d) Thymus

2) Rhodamine B is used in	test.
a) Radioimmunoassay	b) Immune-fluorescence
c) ELISA	d) Complement fixation

# 3) Passive immunization is done by using \_\_\_\_\_. a) Vaccines b) Toxoids c) Immune sera d) Toxins

- 4) \_\_\_\_\_ antibody in called as regain antibody.
  a) IgG b) IgM c) IgA d) IgE
- 5) \_\_\_\_\_ is secondary lymphoid organ.a) Spleen b) Lymphnode c) Peyer's patch d) All of these
- 6) The smallest unit of antigenecity is \_\_\_\_\_.
  a) Epitope b) Adjuvant c) Hapten d) Antibody

#### 7) The first step in the alternate complement activation pathway is

- a) Binding of C1 to antigen-antibody
- b) Binding of C3b to an activator
- c) Binding of C2 to an activator
- d) Binding of antigen to C1

#### B) Define the following terms:

- 1) Isograft and allograft
- 2) Properties of cytokines
- 3) Enlist chemical barriers of innate immunity
- 4) ELISA
- 5) Difference between immediate and delayed type of hypersensitivity
- 6) Give any two organ specific autoimmune diseases
- 7) Presentation of nonpeptide antigens

#### Section – II

## Answer any four of the following:

Q.2	Give structural, morphological, cultural, life cycle and pathogenecity characters, Lab diagnosis, prophylaxis of HIV virus.	14
Q.3	Explain mechanism of processing and presentation of exogenous antigen.	14
Q.4	Write an essay on principle of antigen and antibody interaction.	14
Q.5	<ul> <li>Answer any two of the following:</li> <li>a) Explain structure of MHC class I molecule.</li> <li>b) Explain factors affecting antigenecity.</li> <li>c) Mechanism of allograft recognition.</li> </ul>	14
Q.6	<ul> <li>Answer any TWO of the following:</li> <li>a) Traditional vaccines</li> <li>b) Alternate complement pathway</li> <li>c) Cellular defense mechanisms</li> </ul>	14

Page **2** of **2** 

Seat	
No.	

## M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 BIOTECHNOLOGY

#### AGRICULTURE SCIENCE AND SEED TECHNOLOGY (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

Instructions: : 1) All question of **Section I** are compulsory

- 2) Answer any four questions from Section II
- 3) All question carry equal marks.
- 4) Draw neat and labeled diagrams wherever necessary.

#### Section I

- Q.1 A) Rewrite the sentence after choosing the correct answer from the 07 given:
  - 1) The Red color of red soil is due to \_\_\_\_\_
    - a) Only aluminiumb) Magnesiumc) Only irond) Sesquioxides
  - 2) \_\_\_\_\_ are minute openings distributed in the epidermis of the leaves and young steams.
    - a) Guard cells b) Stomata c) Lenticel d) Cuticle
  - 3) Hormone \_\_\_\_\_ is synthesized by shoot of the plant and migrates toward root.
    - a) Auxin b) ABA c) Cytokinine d) Gibberlline
  - 4) Loss of water in the form of liquid from uninjured margins of the leaves is called.
    - a) Transpiration b) Guttation c) Imbibition d) Osmosis
  - 5) \_\_\_\_\_ plants can grow in desert soil.
     a) Algae b) Bryophytic c) Xerophytic d) Teridophytic
  - a) algae used in preparation of Biofertilizers.
    b) Red
    c) Brown
    d) Green
  - 7) The soil in Brahmaputra Valley is \_\_\_\_\_ type.a) Black b) Entisols c) Alluvial d) Red

#### B) Define the terms:

- 1) Seed germination
- 2) Imbibition
- 3) Transpiration
- 4) Vermicompost
- 5) Moisture stress
- 6) Cattle farming
- 7) Seed certification

	Section II	
Q.2	Answer any four of the following: Write on : Mineral deficiencies and their symptoms.	14
Q.3	Explain: Chemical, physical and microbiological properties of soil.	14
Q.4	Write in detail account of Biofertilizers.	14
Q.5	<ul> <li>Answer two from the following:</li> <li>a) Write a note on poultries farming.</li> <li>b) Explain Physiological and molecular response of plants to temperature stress.</li> <li>c) Explain importance of hormone Cytokinin.</li> </ul>	14
Q.6	<ul> <li>Write short notes on (any two):</li> <li>a) Add a note on: Importance of livestock in agriculture.</li> <li>b) Describe process of Seed certification.</li> <li>c) Explain Fruit ripening process and its control.</li> </ul>	14

Seat No.

## M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 BIOINFORMATICS

## PROGRAMMING IN OBJECT ORIENTED LANGUAGES (OET)

Day & Date: Friday, 28-04-2017

a) Identifier

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Part I, Question 1 is compulsory.

- 2) Attempt any four questions from part II.
- 3) Figures to the right indicate full marks.
- 4) Answer to the **Part-I** and **Part II** are to be written in **same** answer Booklet only.

#### Part – I

- Q.1 A) Rewrite the sentences after choosing the correct answer from the 07 given alternatives.
  - 1) cannot be used for a variable name in Java
    - b) Keyword
    - c) Identifier & keyword d) None of the mentioned
  - 2) is the range of data type short in Java
    - a) -128 to 127 b) -32768 to 32767 a) -128 to 127 b) -32768 to 32767 c) -2147483648 to 2147483647 d) None of the mentioned
  - 3) \_\_\_\_\_ loops will execute the body of loop even when condition controlling the loop is initially false
    - c) for d) None of the mentioned a) do-while b) while
  - 4) Class used to make a thread is \_\_\_\_\_ b) System c) Thread d) Runnable a) String
  - 5) function is called to display the output of an applet.
    - a) display() b) print()
    - c) displayApplet() d) PrintApplet()
  - 6) keyword is used to make a class a) class b) struct c) int d) None of the mentioned
  - 7) Perl stands for .
    - a) Practical extraction report language
    - b) Preparation extraction report language
    - c) Practical extraction review language
    - d) None of these
#### B) Definition:

- 1) Constant in java
- 2) Vectors
- 3) Looping
- 4) Thread
- 5) Applet
- 6) Class
- 7) Perl

#### Part – II

#### Answer any four of the following: Q.2 What is Looping & types of looping in java with suitable example. 14 Q.3 Explain the interface and constants in java with examples. 14 Q.4 Explain array & list data in Perl with example. 14 Q.5 Answer any two of the following: 14 1) Design a simple login page using applet in java. 2) Write a Perl script to display three letter & one letter amino acid code. 3) Explain exception handling in java. Q.6 Write short notes on (any two): 14 1) Thread methods 2) Java features 3) Perl in bioinformatics

07

Max. Marks: 70

M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 BIOINFORMATICS

CANCER GENETICS AND STEAM CELL RESEARCH (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

Seat No.

Instructions: : 1) Section I is compulsory.

- 2) From Section II attempt any four
- 3) All questions carry equal marks.
- 4) Figures to the right indicate full marks.
- 5) Draw neat and labeled diagrams

#### Section – I

Q.1 A) Rewrite the following sentences by using correct alternatives

- 1) Totipotancy is the ability of \_\_\_\_\_ stem cells.
  - a) Mesenchymal b) Hematopoietic
  - c) Adult stem cell d) Embryonic
- 2) Hematopoietic steam cells are \_\_\_\_\_ cell.
   a) Unipotant b) Totipotant c) Pluripotant d) Embryonic
- Regulation of epithelial and mesenchymal interactions is carried out by \_\_\_\_\_
  - a) Platelet Derived Growth Factor- b) Goblet growth factor
  - c) Zymogenic factor d) Tumor Necrotic factor
- 4) The ability to invade surrounding tissue and \_\_\_\_\_ is main hallmark of cancera) Regenerationb) Replication
  - c) Metastasis d) Motility
- 5) \_\_\_\_\_ is inhibitory protein of p53 a) p27 b) Mdm2 c) p21 d) X-rays
- 6) \_\_\_\_\_ proteins act like a spool that DNA can be wound around to become more compact.
   a) Histone b) Nuclease c) Protease d) Helicase
- 7) The proteases system involved in apoptosis pathway is called as
  - a) Caspases b) CD molecules
    - d) TGF-B

Page **1** of **2** 

#### B) Definitions:

- 1) Epigenetics

- 2) Oncogene
   3) Embryonic stem cell
   4) Benign tumor
   5) Hematopoietic Stem Cells
   6) Carcinogenes
   7) Extra Cellular Matrices

Section II

Q.2	Answer any four of the following: Discuss in detail Tumor suppressor gene.	14
Q.3	Explain in detail isolation of stem cells from tissue.	14
Q.4	Explain in detail event of angiogenesis.	14
Q.5	<ul> <li>Answer any two of the following:</li> <li>1) Write on Mesenchymal Stem Cells</li> <li>2) Give details mechanism of Metastatic cascade</li> <li>3) Discuss Radiation Therapy</li> </ul>	14
Q.6	<ul> <li>Answer any two of the following:</li> <li>1) Write a short note on Transplantation Technique.</li> <li>2) Explain Epigenetics in cancer</li> <li>3) Add a note on physical carcinogens.</li> </ul>	14

Max. Marks: 70

Seat No.

## M.Sc. (Semester – II) (CBCS) (NEW) Examination, 2017 **ELECTRONICS** SIGNALS AND SYSTEMS (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) Q no. 1 & Q. no. 2 are compulsory.
  - 2) Attempt any three questions from Q. no. 3 to 7
  - 3) Attempt five questions.

#### Q.1 A) **Choose the correct Answer:**

- 1) The periodic signals satisfying the conditions \_\_\_\_\_, then it is said to have half wave symmetry.
  - a) x(t) = x(t + T/2)
  - b) x(t) = x(t T/2)c)  $x(t) = -x(t \pm T/2)$ d) x(n) = x(n + N/2)
- 2)  $X(n) = a^{|n|} |a| < 1$  is
  - a) An energy signal
  - b) Neither an energy signal nor a power signal
  - c) A power signal
  - d) An energy as well as a power signal

#### 3) If x(t) is odd, then its fourier series coefficients must be

- a) Real and even
- b) Real and odd
- c) Imaginary and odd d) Imaginary and even
- 4) To obtain x(4-2n) From the given signal x(n), the following precedence rule is used for operations on the independent variable n:
  - a) Time scaling  $\rightarrow$  Time shifting  $\rightarrow$  Refection
  - b) Reflection  $\rightarrow$  Time scaling  $\rightarrow$  Time shifting
  - c) Time scaling  $\rightarrow$  Reflection  $\rightarrow$  Time shifting
  - d) Time shifting  $\rightarrow$  Time scaling  $\rightarrow$  Reflection
- 5) In the fourier series coefficients of a signal are periodic then the signal must be a) continuous time, periodic b) discrete time, periodic
  - c) continuous time, non-periodic d) discrete time, non-periodic
- 6) The fourier series coefficient of the shifted signal  $x(t-t_0)$  are

a) e<sup>-jnwt</sup>C<sub>n</sub> b)  $e^{jnwt}c_n$  c)  $e^{wt}c_n$ d) e<sup>-wt</sup>c<sub>n</sub>

7) Which of the following is purely even signal? a)  $X(t)=e^{at}$  b)  $X(t)=A\cos w_0 t$  c)  $X(t)=e^{jwot}$ d) X(t)=u(t) 8) In MATLAB \_\_\_\_\_ sign is for the assignment operator. a) = b) % c) = = d) ~

#### B) State true or false:

- 1) On multiplying a non-casual signal by unit step function then it became casual.
- 2) For energy signal the power is Zero.
- 3) The amplitude of anti-symmetric signal is always one at origin.
- 4) The system that require memory are called static system.
- 5) Mathematically unit step function is derivative of unit impulse function.
- 6) A LTI system is casual if impulse response is equal to zero.

#### Q.2 A) Attempt any two:

- 1) Define a system. How the systems are classified?
- 2) Write a note on different types of file used in Matlab.
- 3) Check whether the following system are time variant or not i) y(n) = x(n) + nx(n-1) ii)  $y(n) = x^2(n-1) + a$
- **B)** Write a Matlab program to plot a continuous time cosine signal **04** and its sampled version.
- Q.3 A) Obtain the fourier components of the periodic square wave 08 which is symmetrical with respect to the



vertical axis at time t=0, as shown in figure 1

- **B)** With regard to fourier series representation, justify the following **06** statement
  - 1) Odd functions have only sine terms.
  - 2) Even functions have no sine terms.
  - 3) Functions with half-wave symmetry have only odd harmonics.

**Q.4** A) Obtain liner convolution of following sequence using graphical **08** method  $x(n) = \{1, 2, 1, 2\}$  and  $h(n) = \{1, 1, 1\}$ 

**B)** Prove that LTI system is completely characterized by unit **06** impulse function.

Q.5 A)A discrete signal x(n) is defined as<br/>x(n) = (1+n/3) for  $-3 \le n \le -1$ 08

$$= 1 \qquad \text{for} \qquad 0 \le n \le 3$$

= 0 elsewhere

10

- 1) Determine its value and sketch the signal x(n).
- 2) Sketch the signal that result if we
  - i)  $1^{st}$  fold x(n) then the delay the resulting sequence by 4 samples.
  - ii)  $1^{st}$  delay x(n) by 4 sample then fold the resulting signal.
- 3) Express the sequence x(n) in terms of sequence  $\delta(n)$  and u(n).
- **B)** Determine impulse response of the DT-LTI system in terms of unit impulse input  $\delta(n)$  for  $h(n)=2^{-n} u(n) 2^{-n} u(n-3)$
- **Q.6 A)** State and prove parsevals theorem for complex exponential **08** fourier series.
  - **B)** Determine whether the following system is liner or not **06**

$$y(n) = \frac{1}{3}[x(n) + x(n-1) + x(n-2)]$$

**Q.7** A) Obtain the trigonometric fourier series for the half-wave rectified **08** sine wave shown in figure 2.



**B)** Sketch the continuous time signal  $x(t)=2\sin\pi t$  for n interval **0**  $0 \le t \le 2$  sample the continuous time signal with sampling period T=0.2 sec and sketch the s=discrete time signal. **06** 

# SLR-OET-31

14

Max. Marks: 70

Seat No.

## M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 BOTANY ADVANCES IN PLANT PATHOLOGY (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

		<b>N.B.</b> : 1) / 2) ( 3) A 4) A 5) Fi	Attempt in <b>all five</b> qu Q. <b>1</b> is <b>compulsory</b> . Attempt any <b>two</b> from Attempt any <b>two</b> from igures to the <b>right</b> in	uestions. n Q. No. 2, 3 and 4 <b>.</b> n Q. No. 5, 6 and 7 <b>.</b> dicate <b>full</b> marks.	
Q.1	Cł	oose the correct a	nswer from the give	en alternatives.	
	1)	In Julius Kuh a) 1858	n in Germany had de b) 1857	efined plant disease c) 1868	e. d) 1859
	2)	Club root of crucifer a) Moronin	was first described l b) Woronin	by in 1877. c) Boronin	d) Goronin
	3)	White rust is the exa a) viral b)	ample of dise ) fungal c)	ease. bacterial d)	mycoplasma
	4)	Powdery mildew of	grapevines disease v	was reported from E	England in
		a) 1847	b) 1846	c) 1845	d) 1844
	5)	Red rust is the exan a) fungal	nple of disea b) viral	ise. c) algal	d) bacterial
	6)	Singh et. al. in	tried to put up a	moderately precise	e definition of
		disease. a) 1989	b) 1979	c) 1969	d) 1959
	7)	in 1886 was i	the first to study critic	cally the nature of d	lirect
		a) De Bary	b) De Vary	c) De Mary	d) De Carry
	8)	a) CMV	ple of viral disease. b) BMV	c) GMV	d) DMV
	9)	Jones in dir	ected increased atte	ntion towards the re	elation of the
		environment for dev a) 1964	elopment of disease b) 1974	c) 1924	d) 1934

	10) Curl in has reviewed the control of plant disease by crop					crop	
		a) 1977	b) 1987	c) 1999	d	) 1963	
	11)	Disease foreca a) Epidemiolog c) apidemolog	asting is the examp Jy y	ble of b) lepide d) none o	mology of these		
	12)	In 1845 the dis a) India	sease destroyed th b) West Indies	e potato crop in c) Finlan	d d	) Ireland	
	13)	The term disea a) 1969	ase made by Horsf b) 1959	all and Diamon c) 1979	d in d	) 1989	
	14)	The literature been reviewed a) Walker	on the genetics of 1 by in 1965 b) Singh	disease resistar c) Nanir	ice in vegeta d) None o	ables has f these	
Q.2	a) b)	Describe the o What is rust?	classification of pla Explain the rust dis	nt diseases bas sease studied b	ed on crops y you.		07 07
Q.3	a) b)	<ul> <li>i) Explain the methods of diagnosis of plant diseases.</li> <li>i) Give the symptoms, causal organism, disease cycle and control measures of little leaf of brinjal.</li> </ul>				07 07	
Q.4	a) b)	Explain the pr Describe the g you	otection methods o genetical and chem	of plant disease nical defense m	control. echanism st	udied by	07 07
Q.5	a)	<b>i)</b> Describe the symptoms, causal organism and control measures of					
	b)	Explain the sy	mptoms, casual or	aganism and co	ontrol measu	ires of root	05
	C)	Give the conc	ept of plant diseas	e.			04
Q.6	a) b) c)	Describe the e Explain the se Write note on	exclusion of plant c ed borne pathogen post penetration.	lisease control n studied by you	1.		05 05 04
Q.7	Wr a) b) c) d)	<b>ite notes on a</b> GSD Importance of Colonization Eradication	n <b>y three.</b> plant disease				14

Seat	
No.	

## M.Sc. (Semester – II) (CBCS) (NEW) Examination, 2017 AGROCHEMICALS AND PEST MANAGEMENT BIOTECHNOLOGICAL ASCPECTS IN PLANT PROTECTION- I (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) All questions are compulsory.
  - 2) Attempt any two questions from section II and III.
  - 3) Figure to **right** indicate **full** marks.
  - 4) All questions carry equal marks.

#### SECTION – I

#### **Objective type:**

- N. B.: I) Correct answer to each items carries one mark.II) There are in all 14 items for 14 marks.
- 1) Botanical name of onion \_\_\_\_\_.
  - a) Brassica oleracea Linn. Var. capitata
  - b) Arachis hypogaea Linn
  - c) Allium cepa Linn
  - d) Triticum aestivum Linn
- 2) Sugarcane breeding institute is established at \_\_\_\_\_.
  a) Coimbatore b) Bangalore c) Delhi d) Indore
- 3) \_\_\_\_\_is a serious disease of wheat.
  a) Rust b) Smut c) Leaf blight d) Foot root
- 4) Ground nut belong to the \_\_\_\_\_\_family.
  a) Acanthaceae
  b) Caesalpiniaceae
  c) Mimosaceae
  d) Fabaceae
- 5) \_\_\_\_\_ is the Sorghum variety cultivation in Rabi season.
   a) SPV-286 b) Shewta c) Phule Yeshoda d) None of these
- 6) The term horizontal resistance was first used by
  a) J.E. Vanderplank
  b) Raoul A Robinson
  c) Gautheret
  d) Laibach
- 7) \_\_\_\_\_is group of plant produced from a single plant through asexual reproduction.
   a) Clones
   b) Plasmids
   c) Vector
   d) Enzymes
- 8) Root initiating hormone in tissue culture is \_\_\_\_\_.a) Auxin b) Gibberllins c) Cytokinens d) ethylene

	9) № a c	<ul><li>1ercury chloride is used in tissue</li><li>) Microelement</li><li>) Surface sterilization</li></ul>	culture for b) Preservation d) Nutrition	
	10) E c a c	Enzymes used in recombinant DN cleaving DNA molecules are calle a) Synthetases c) Polymerases	<ul> <li>IA technology which help in</li> <li>d</li> <li>b) Ligases</li> <li>d) Restriction endonucleases</li> </ul>	
	11)   a c	Recombinant DNA technique was ) Stanley Cohen ) Hertbert Boyer	<ul> <li>first proposed by</li> <li>b) Helling</li> <li>d) Peter Lobben</li> </ul>	
	12) / r a c	An ability of a plant cell by virtue o plant under suitable conditions is a) Somatic hybridization c) Totipotency	of which it can generate whole called b) Micropopagation d) Organogenesis	
	13) F a c	PCR technique was developed by a) Herbert Boyer c) Twor and d'Herelle	/ b) Stanley Cohen d) K. Mullis	
	\ (14 a ر	Which of the following is an e.g. a) Human growth harmone c) Ribosomal RNA	of cloning vector? b) Plasmid d) Mosquito	
		SECTIO	N – II	
	N. B	<ul> <li>I) Answer any questions.</li> <li>II) Each question carries 14 ma</li> </ul>	arks.	
Q.2	A)	Describe in detail cultivation me respect to soil and climate, seed	thod of Groundnut crop with I rate and sowing, varieties and	07
	B)	Describe in detail cultivation me respect to soil and climate, seed fertilizer.	thod of Sorghum crop with I rate and sowing varieties,	07
Q.3	A) B)	What is seed technology? Describe in detail technique of h diseases resistance variety.	ybrid seeds production for	07 07
Q.4	A) B)	Biochemical defense. Breeding for disease resistance		07 07
<b>-</b> -	•	SECTIO	N - III	
Q.5	A) B) C)	Anther culture Screening for disease resistanc	e.	05 05 04
Q.6	A) B) C)	Introduction of Bt gene. Glyphosate resistant gene. Agro bacterium mediated gene	transfer.	05 05 04
Q.7	A) B) C)	Plant protection measure of Tor Fertilizer requirements of Cabba Backcross method of plant bree	nato. age. ding.	05 05 04

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# M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 NANOTCHNOLOGY

#### NANO-MEDICINE (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Part I, Question 1 is compulsory.

- 2) Attempt any four questions from part II
- 3) Figures to the right indicate full marks.
- 4) Answer to the Part-I and Part II are to be written in same answer Booklet only.

#### Part – I

- Rewrite the sentences after choosing the correct answer from the Q.1 A) 07 given alternatives.
  - 1) The Process of determining differences in the genetic make-up of an individual by examining the individual's DNA sequence is known as
    - a) Karyotyping

b) Phenotyping

c) Karyogram

- d) Genotyping
- term refers to the intersection of nanotechnology and 2) biology.
  - a) Biotechnology
  - c) Microbiology

b) Nanotechnology d) Nanobiotechnology

- 3) A collection of techniques used to analyse biological markers in the genome and proteome is called diagnostics.
  - a) Microbiology c) Chemical

- b) Molecular d) Pathological
- 4) microscopy is a very-high-resolution type of scanning probe microscopy.
  - a) Atomic force
- b) Scanning electron
- c) Transmission d) Scanning tunnel
- 5) A synthetic polymer with a branching, tree-like structure is called

a) Monomer b) Tetramer c) Dendrimer d) Monomer

- 6) Quantum dot is semiconductor crystal of \_\_\_\_\_ dimensions with distinctive conductive properties determined by its size.
  - a) Nonometer b) Picometer
  - c) Centimeter d) Meter

- 7) A \_\_\_\_\_ is an analytical device, used for the detection of an analyte that combines a biological component with a physicochemical detector.
  - a) Nanosensor
  - c) Nanodevice

- b) Nanolaser
- d) Biosensor

#### B) Define the following terms:

- 1) Nanobiochip
- 2) DNA nanomachines
- 3) Drug discovery
- 4) Nano electronics
- 5) Cantilever
- 6) Nanolasers
- 7) Microfluidic chips

#### Part – II

Q.2	Write a shot note on nanodignostics. Explain the role of nanoarrays in molecular diagnostics	14
Q.3	What are nanobarcodes? How are they used in SNP genotyping?	14
Q.4	Write a short note on nanobiotechnology and its role in drug discovery.	14
Q.5	Write a short not on nanomedicine. Explain in brief about nanoparticle drug system for oral administration.	
Q.6	<ul> <li>Write short notes on (any two):</li> <li>1) Tectodendrimers</li> <li>2) Biodegradable polymers</li> <li>3) Gold nanoparticles for drug discovery</li> </ul>	14
Q.7	<ul> <li>Explain the following in detail (any two):</li> <li>1) Pharmacokinetics of nanocarrier</li> <li>2) Nanoarray devices</li> <li>3) Q dot nanobarcode for multiplexed gene expression profiling.</li> </ul>	14

SLR-OET-36

Seat	
No.	

#### M.Sc. (Semester - II) (New) (CBCS) Examination, 2017 NANOTECHNOLOGY **GREEN MANUFACTURING TECHNOLOGY (OET)**

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

Instructions: : 1) Part-I, Question 1 is compulsory.

- 2) Attempt any four questions from Part II
- 3) Figures to the right indicate full marks.
- 4) Answer to the Part –I and Part-II are to be written in same answer Booklet only

#### Part-I

- Q.1 A) Rewrite the sentence after choosing the correct answer from the 07 given alternatives
  - 1) The two main solvents for rubber are \_\_\_\_\_ and \_\_\_
    - a) Turpentine and Naphtha b) Toluene and Chloroform
    - c) Naphtha and Toluene d) Chloroform and Turpentine

2) Waste disposal of biodegradable plastics is either \_\_\_\_\_ or \_\_\_\_

- a) Aerobic and Anaerobic b) Aerobic and Decomposition
- c) Decomposition and Fermentation d) Fermentation and Aerobic
- 3) Flexible is the ability for a robot or system to be quickly and easily re-tasked to change product design for both low and high mix manufacturing.
  - b) Renovation c) Automation a) Arm d) Lea
- is the integrated management of all the activities required 4) to move products through the supply chain.
  - a) Sustainable green manufacturing b) Waste management
  - c) Industrial ecology d) Logistics
- 5) Plant protein \_\_\_\_\_ from maize is used to manufacture bioplastics. a) Keratin b) Albumin c) Actin d) Zein
- 6) Rapid Prototyping employs \_\_\_\_\_ fabrication techniques to quickly manufacture parts. a) Manual b) non digital c) Digital d) Physical
- 7) The container must be chemically \_\_\_\_\_ with the material it will hold.
  - a) Inert b) Incompatible c) Ignitable d) Reactive

#### B) Define/ Explain:

- 1) E-waste
- 2) Polyesters
   3) Carbon footprint
- 4) Rapid prototyping
- 5) Incineration
- 6) Microfabrication
- 7) Pyrolysis

#### Part – II

	Answer any four of the following:	
Q.2	What is green manufacturing? What are the different stages involved in it?	14
Q.3	Describe in detail different alternative energy resources.	14
Q.4	Need of energy management and its importance.	14
Q.5	What is product stewardship? Write a short note on codes developed by American Chemistry Council	14
Q.6	<ul> <li>Write short note any two:</li> <li>a) Motivation provided by government for green manufacturing</li> <li>b) Metrics for green manufacturing</li> <li>c) Air emission management</li> </ul>	14
Q.7	<ul><li>Explain in detail about any two:</li><li>a) Types of waste</li><li>b) Rubber</li><li>c) By-product synergy</li></ul>	14

# SLR-OET-37

Seat No.

	2) Attempt	any 4 ques	tions fro	m F	Part II				
	3) Figures 4) Answer	to the right to the Part I	indicates and Par	s tu + 11	ill marks are to be	written	in f	the same	•
	booklet	only.	anara			Whiteh			
Re fo	ewrite the sentence llowing:	by choosii	Part Ing corre	ect	alternativ	ves fro	m t	he	
1)	Probability always I a) 0 to 2	ies between b) -1 to1		c)	0 to 1		d)	0 to infir	nit
2)	Discrete variable ta a) Particular values c) Only negative va	kes s alues		b) d)	Values be None of ti	etween nese	ran	ge	
3)	The result of statist	ical test, der	noted p,	sha	all be inter	rupted	as	follows	
	<ul> <li>a) the null hypothesis H0 is rejected if p&lt;0.05</li> <li>b) the null hypothesis is H0 is rejected if p&gt;0.05</li> <li>c) the alternate hypothesis H1 is rejected if p&gt;0.05</li> <li>d) the null hypothesis is H0 is accepted if p&lt;0.05</li> </ul>								
4)	a) Median	fected by ex b) Mean	treme va	alue c)	e Mode		d)	Variance	Э
5)	By using histogram a) Mean	we find b) Median	c)	Mo	ode	d) No	ne	of these	
6)	Hypothesis of no di a) Null hypothesis c) Simple hypothes	fference is c sis	alled as	b) d)	Alternativ Composi	ve hypo te hypo	othe	sis sis	
7)	Mean of poisson dia a) $\Lambda$	stribution is <sub>.</sub> b) λ²		C)	λ²+ λ		d)	$\lambda^3$	
8)	distributior a) Binominal` c) Chi-square	n is used for	goodne	ss d b) d)	of fit. Normal Poisson				1

M.Sc. (Semester - II) (New) (CBCS) Examination, 2017 **MICROBIOLOGY BIOINFORMATICS & BIOSTATISTICS (OET)** 

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

**Instructions:** : 1) Part-1. Question 1 is compulsory

- e answer
- Q.1
  - nity

Max. Marks: 70

	9) is a structure database. a) PDB b) SWISS-PROT	c) Gen Bank	d) TrEMBL	
	10) Gen Bank hasdivisions a) 4 b) 11	c) 13	d) 17	
	<ul><li>11) In a phylogenetic tree Root represe</li><li>a) Common ancestor</li><li>c) Branching</li></ul>	ents b) taxa d) Species		
	<ul><li>12) Swiss-Prot is a</li><li>a) Nucleic and sequence database</li><li>c) Protein sequence database</li></ul>	b) Structure da d) Composite d	atabase database	
	13) TrMBL contains all the translations a) DDBJ b) EMBL	of sequences from c) GenBank P	'DB	
	<ul> <li>14) DDBJ stands for</li> <li>a) DNA Data Base of Japan</li> <li>c) DNA Data Book of Japan</li> </ul>	<ul><li>b) DNA Data Bank or</li><li>d) None of these.</li></ul>	f Japan	
0.2	Par Answer any four questions from the What is ExPASy2 Discuss various tools	<b>t II</b> following:	14	
Q.3	Explain homology modeling. Add a note on BLAST			
Q.4	Give a detailed account on nucleic acid databases			
Q.5	<ul> <li>Write short answer (any two):</li> <li>a) Explain in detail stratified &amp; cluster s</li> <li>b) What is dispersion? Explain its mea</li> <li>c) Describe briefly regression methods</li> </ul>	sampling. sures. S.	14	
Q.6	<ul> <li>Write short notes on any two:</li> <li>a) What id F-Test? Explain with examp</li> <li>b) Define alternative hypothesis with example.</li> <li>c) Describe in detail one tailed &amp; two tailed and the tailed and tailed</li></ul>	ole. xamples. ailed test.	14	

Seat	
No.	

# M.Sc. (Semester – II) (New) (CBCS) Examination, 2017 GEOGRAPHY

**REGIONAL GEOGRAPHY OF INDIA (OET)** 

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

- **N.B.**: 1) All questions are compulsory.
  - 2) All questions Carry equal marks
  - 3) **Use** of stencils is **allowed**.
  - 4) Draw **neat** diagrams wherever **necessary**.

#### Q.1 A) Choose the correct alternative given in the bracket.

07

- 1) \_\_\_\_\_ hills are located at the north eastern edge of Chota Nagpur Plateau.
  - a) Rajmahal b) Mikir c) Parasnath d) Garo
- 2) The oldest mountains in India are \_\_\_\_\_.a) Arvalis b) Vindhyas c) Satpuras d) Nilgiri Hills
- 3) The South-West monsoon contributes \_\_\_\_\_ of total rain in India.
  a) 86% b) 50% c) 22% d) 100%
- 4) \_\_\_\_\_ is the most widespread and most productive soil in north India.
  - a) Alluvial Soil b) Laterite soil
  - c) Black soil d) Red soil
- 5) \_\_\_\_\_ rock system is the main source of coal in India.
  - a) Gondwana b) Cuddappa c) Vindhyan d) Dharwar
- 6) \_\_\_\_\_ State touches maximum number of States in India.
  - a) Madhya Pradesh

c) Delhi

- b) Rajasthan
  - d) Uttar Pradesh
- 7) The coast of Tamilnadu has \_\_\_\_\_\_ forests.
  - b) Moist Deciduous
  - a) Dry Deciduousc) Dry Evergreen
- d) Evergreen

	<ul> <li>B) Fill in the blanks:</li> <li>1)a food grain crop occupies the largest part of the cropped area in India.</li> <li>2) The river Godavari joins Bay of Bengal near</li> <li>3) Bokaro coal mine is located in the State of India.</li> <li>4)forest is economically useful in India.</li> <li>5)port has been formed for export of iron ore.</li> <li>6)is the predominant type of Indian agriculture.</li> <li>7) The largest number of sugar mills are located in State of India.</li> </ul>	07
Q.2	Discuss on the classification of natural vegetation in India.	14
Q.3	Describe in detail the distribution and production of petroleum in India. <b>OR</b>	14
	Give a brief account of major industrial regions of India.	
Q.4	<ul> <li>Write short answers for the following questions (any two):</li> <li>1) The peninsular region of India.</li> <li>2) Write a geographical essay on Uttaranchal State.</li> <li>3) Describe the distribution of iron ore in India.</li> <li>4) Give an account of sugarcane production in India.</li> </ul>	14
Q.5	<ul> <li>Write short answers for the following questions (any two):</li> <li>1) Sundaraban delta region in India.</li> <li>2) The Gengetic plain region.</li> <li>3) The concept of Micro regions.</li> <li>4) Agro- climatic regions of India.</li> </ul>	14

### (मराठी रूपांतर)

सूचना : 1) सर्व प्रश्न अनिवार्य आहेत. 2) उजवीकडील अंक गुण दर्शवतात. 3) आवश्यक तेथे सुबक आकृत्या काढा. 4) आवश्यक तेथे सुबक आकृत्या व नकाशे काढा. योग्य पर्याय निवडा व उत्तरे लिहाः प्र.1 अ. 07 1. छोटया नागपूर पठाराच्या ईशान्येस --- टेकड्या तयार झालेल्या आहेत. अ. राजमहाल ब मिकीर क. पारसनाथ ड. गारो 2. ---- हा भारतातील जुना पर्वत आहे. अ. अरवली ब. विंध्य ड. निलगिरी हिल्स क. सातपुडा नैऋत्य मान्सून वाऱ्यापासून भारतात एकूण —— पाऊस पडतो. क. 22 % अ. 68 % ब. 50 % ड. 100 % 4. उत्तर भारतामध्ये सर्वाधिक विस्तारित व जास्त उत्पादन देणारी ----मृदा आहे. क. रेगूर अ. गाळाची ब. जांभा ड. तांबडी 5. भारतात ---- खडकप्रणाली हा कोळशाचा मुख्य स्त्रोत आहे. क. विंध्ययन अ. गोंडवाना ब. कडाप्पा ड. धारवार 6. ---- या राज्याचा जास्तीत-जास्त संख्येने स्पर्श भारतातील राज्यांचा येतो ब. राजस्थान क. दिल्ली अ. मध्य प्रदेश ड. उत्तर प्रदेश 7. तामीळनाडू किनाऱ्याला —— प्रकारची जंगले आढळतात. अ. शुष्क पानझडी ब. आर्द्र पानझडी क. शुष्क सदाहरित ड. सदाहरीत गाळलेल्या जागा भरा. ब. 07 भारतातील ——— या धान्य पिकाचे मोठया प्रमाणात क्षेत्र आहे. गोदावरी नदी बंगालच्या उपसागराजवळ ——— येथे मिळते. ––– राज्यात बोकारो कोळसा खाण आहे. 4. भारतातील आर्थिकदृष्टया ---- हे उपयोगी जंगल आहे. 5. लोहखनिजाच्या निर्यातीसाठी --- या बंदराची निर्मिती केली आहे. —— प्रकारची भारतीय शेती महत्वाची आहे. 7. --- राज्यामध्ये भारतात सर्वाधिक साखर कारखाने आढळतात. भारतातील नैसिर्गिक वनस्पतीच्या वर्गीकरणावर चर्चा करा. प्र.2 14 भारतातील खनिज तेलाचे वितरण व उत्पादनाचे सविस्तर वर्णन करा. प्र.3 14 किंवा

भारतातील मुख्य औदयोगिक विभागाचा थोडक्यात आढावा घ्या.

- प्र.4 थोडक्यात उत्तरे लिहा (कोणतेही दोन)
  - 1. भारतीय व्दिपकल्पीय प्रदेश
  - 2. उत्तरांचल राज्यावर भौगोलिक निबंध लिहा.
  - 3. भारतातील लोहखनिजाचे वितरण वर्णन करा.
  - 4. भारतातील ऊस उत्पादनाची माहिती दया.
- प्र.5 थोडक्यात उत्तरे लिहा (कोणतेही दोन)
  - 1. भारतातील सुंदरबन त्रिभुज प्रदेश
  - 2. गंगेचे मैदानी प्रदेश
  - 3. सूक्ष्म प्रदेश संकल्पना
  - 4. भारताचे कृषी हवामान प्रदेश

Seat No.

#### M. Sc. (Semester – II) (New) (CBCS) Examination, 2017 GEOGRAPHY GEOGRAPHY OF MAHARASHATRA (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

07

Time: 10.30 AM to 01.00 PM

#### **N.B.**: 1) All questions are compulsory.

2) All questions Carry equal marks

3) **Use** of stencils is **allowed**.

4) Draw neat diagrams wherever necessary.

#### Q.1 A) Choose the correct alternative given in the bracket.

- 1) There are \_\_\_\_\_ physiographical division in Maharashtra a) 4 b) 6 c) 3
- 2) \_\_\_\_\_ is longest river in Maharashtra.a) Krishna b) Godavari c) Bhima
- 3) Konkan receives \_\_\_\_\_ type of rainfall.a) Orographic b) Cyclonic c) Convectional
- 4) \_\_\_\_\_ is the high grade iron-ore.
  a) Hematite
  b) Limonite
  c) Magnetite
- 5) \_\_\_\_\_ is obtained from Bauxite. a) Calcium b) Aluminum c) Sodium
- 6) \_\_\_\_\_ district stands first in sugarcane production.a) Ahemadnagarb) Jalanc) Akola
- 7) Pandharpur is famous for \_\_\_\_\_ center in Maharashtra.a) Industrial b) Trade c) Religious

#### B) Fill in the Blanks:

- 1) There are \_\_\_\_\_ administrative division of Maharashtra.
- The total length of the coast line of Maharashtra is \_\_\_\_\_\_ K.M.
- 3) \_\_\_\_\_ type of soil is suitable for cotton crop.
- 4) \_\_\_\_\_ is the highest grade of coal.
- 5) Lonar lake is located in \_\_\_\_\_ district.
- 6) \_\_\_\_\_ production take place in Bombay hay.
- 7) \_\_\_\_\_ power resource is known as mother of industry.

Q.3	A)	Explain the distribution and production of automobile industry in Maharashtra.	14
		OR	
	B)	State the importance of transportation and explain distribution of railway in Maharashtra.	
Q.4	Wr	ite short answers for the following questions (any two):	14
	1)	Explain types of soils in Maharashtra.	
	2)	Describe distribution of coal in Maharashtra.	
	3)	Explain distribution and production of wheat in Maharashtra.	
	4)	Describe the tourism centers in Maharashtra.	
Q.5	Wr	ite short answers for the following questions (any two):	14
	1)	Natural vegetation in Maharashtra.	
	2)	Iron-ore in Maharashtra	
	3)	Concept of eco-tourism	
	4)	Roads in Maharashtra.	

#### (मराठी रूपांतर)

सूचना : 1) सर्व प्रश्न अनिवार्य आहेत. 2) उजवीकडील अंक गुण दर्शवतात. 3) आवश्यक तेथे सुबक आकृत्या काढा. 4) आवश्यक तेथे नकाशे काढा. कंसातील योग्य पर्याय निवडून रिकाम्या जागा भराः प्र.1 अ. 07 1. महाराष्ट्रात —— प्राकृतिक विभाग आहे. अ. ४ ब. 6 क. 3 2. महाराष्ट्रात ---- सर्वात लांब नदी आहे. अ. कृष्णा ब. गोदावरी क. भीमा कोंकणा मध्ये —— प्रकारचा पाऊस पडतो. अ. प्रतिरोध ब. आरोह क. अभिसरण ––– हे उच्च प्रतीचे लोह खनिज आहे. 4. अ. हेमेटाईट ब. लिमोनाईट क. मांगनेटाईट अभ्रक पासून —— प्राप्त होते. 5. अ. कैल्सियम ब. अल्यूमिनियम क. सोडियम ऊस उत्पादनात --- जिल्हयाचा प्रथम क्रमांक लागतो. 6. क. अकोला अ. अहमदनगर ब. जालना 7. महाराष्ट्रात पंढरपूर हे ---- केंद्र म्हणून प्रसिध्द आहे. ब. व्यापारी अ. औद्योगिक क. धामिक रिकाम्या जागा भरा. ब. 07 1. महाराष्ट्रात —— प्रशासकीय विभाग आहे. 2. महाराष्ट्राची किनारपट्टी प्रदेशाची एकूण लांबी ---- कि.मी. आहे. 3. कापूस पिकासाठी ---- प्रकारची माती योग्य आहे. 4. ---- हे उच्च प्रतीचा दगडी कोळशा आहे. 5. लोणार सरोवर ---- जिल्ह्या मध्ये आढळते. बॉम्बे हाय मध्ये —— उत्पादन घेतले जाते. 7. ---- ला उद्योगाची माता म्हणून ओळखले जाते. महाराष्ट्रातील जल प्रणालीचे सविस्तर वर्णन करा. प्र.2 14 अ. महाराष्ट्रातील ओटोमोबाईल उद्योगाचे वितरण व उत्पादन स्पष्ट करा. प्र.3 14 थ्कंवा वाहतुकीचे महत्व सांगून महाराष्ट्रातील रेल्वेचे वितरण स्पष्ट करा. ब. खालिल प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही दोन) प्र.4 14 1. महाराष्ट्रातील मातीचे प्रकार स्पष्ट करा. महाराष्ट्रातील दगडी कोळशाचे वितरण लिहा. महाराष्ट्रातील गव्हाचे वितरण व उत्पादन स्पष्ट करा. महाराष्ट्रातील पर्यटन केंद्राचे वर्णन करा.

- प्र.5
- टीपा लिहा. (कोणतेही दोन) 1. महाराष्ट्रातील नैसर्गिक वनस्पती
  - महाराष्ट्रातील लोह खनिज 2.
  - ईको पर्यटनाची संकल्पना 3.
  - 4. महाराष्ट्रातील रस्ते

Page **4** of **4** 

## SLR-OET-41

Seat No.

### M.A. (Semester – II) (New) (CBCS) Examination, 2017 ECONOMICS INDIAN ECONOMY (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

#### **N.B.**: 1) **All** questions are **compulsory**. 2) Figure to **right** indicate **full** marks.

#### Q.1 Multiple choice questions: 14 1) SLR means . a) Statutory Liquidity Ratiob) Statistical low of Rationc) Supportive liquidity Ratiod) None of these 2) MSP is \_\_\_\_\_ a) Maximum Support Price c) Minimum Special Price d) None of these 3) CACP established in \_\_\_\_\_. a) 1980 b) 1985 c) 1965 d) 1974 Planned economy for India' this book is written by \_\_\_\_\_ b) Mahatma Gandhi a) J. Nehru c) M. Visvevaraya d) None of these 5) HYVP means a) High Yielding Varieties of Pesticides b) High Yielding Varieties of Product c) High Yielding Varieties of Programme d) None of the above 6) \_\_\_\_\_ is the Apex Financial Institution that controls the share market. a) SEBI b) RBI c) FCI d) IRDI 7) NABARD was established in \_\_\_\_\_ \_. c) 1982 a) 1980 b) 1981 d) 1983 Write short notes (any 4 out of 5) Q.2 14 1) Economics Planning 2) Disinvestment 3) Public Sector Enterprises 4) MSP

5) SEBI

Max. Marks: 70

Q.3	<ul> <li>Write short answers (any 2 out of 3)</li> <li>1) Explain the characteristics of small scale industries.</li> <li>2) Explain the problems of agriculture marketing in India.</li> <li>3) Explain the strategy of Seventh and Eighth Five Year Plan.</li> </ul>	14
Q.4	<ul> <li>Descriptive type questions</li> <li>1) Explain the various sources of agricultural finance.</li> <li>OR</li> <li>2) Discuss the' Green Revolution in India'.</li> </ul>	14
Q.5	Evaluate the 'Public Distribution System' In India.	14

Seat No.

### M.A. (Semester – II) (New) (CBCS) Examination, 2017 HISTORY AND ARCHAEOLOGY INDIAN TOURISM (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

Time: 10.30 AM to 01.00 PM

#### **N.B.**: 1) All questions are compulsory. 2) Figure to right indicate full marks.

#### Q.1 Select appropriate word: 14 1) is the popular tourist destination in Maharashtra. a) b) Ajanta c) Karle d) Bedse Daulatabad 2) International tourism is useful for \_\_\_\_\_. a) Achieving national unity b) Economic prosperity d) None of these 3) The Chaitya Hall at \_\_\_\_\_ is the longest and most magnificent in Maharashtra. a) Kanheri b) Karle c) Junnar d) Amravati 4) The famous Ambarnath Temple is located at \_\_\_\_\_ district. c) Kolhapur d) Satara a) Pune b) Thane 5) The famous Tin-Tal caves are situated in tourist place. a) Karle b) Bnaje c) Airbus c) Nationality d) Passport c) Ajanta 7) Travelers from \_\_\_\_\_ country visited ancient India. a) China b) Japan c) France d) England Write short notes of the following: (any four of the following) Q.2 14 1) Agro Tourism 2) Bhaje Caves 3) State Tourism Department 4) Aihole Museum 5) ICAO Organization Write a short answers of the following: (any two out of three) 14 Q.3 1) Explain the Purpose & Scope of Tourism. Write in detail about work of ITDC. 3) Discuss the qualities of tourist guide. Answer any one of the following: 14 Q.4 Describe the place of tourism in modern life with suitable examples. OR Why tourists are attracted towards the Elephanta cave? Explain.

**Q.5** Elaborate the 'New Trends in Tourism'.

## SLR-OET-45

Seat No.

## M.A. (Semester – II) (New) (CBCS) Examination, 2017 RURAL DEVELOPMENT SOCIAL MARKETING (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

#### **N.B.**: 1) All questions are compulsory. 2) Figure to right indicate full marks.

#### Q.1 Multiple choice questions:

- 1) Which of the following does not include four 'Ps' of Marketing? b) Purpose a) Product c) Price d) Promotion
- 2) State is one of agencies of Social Marketing. a) Government b) None-government c) International
  - d) Corporate
- 3) Market is essentially a \_\_\_\_\_ institution a) Educational b) Social c) Special d) None of the above
- 4) BAIF, Pune is a \_\_\_\_\_.
  - a) State
  - c) International agencies
- b) Corporate agencies
- d) NGO's

d) Pricing policy

- 5) What is the long form of IEC?
  - a) Information Education and Communication
  - b) Information Election and Communication
  - c) Information Education and Coordination
  - d) Identification Education and Communication
- 6) Which of the following element does not include in SWOT analysis? a) Strength b) Weakness c) Opportunity d) Technique
- 7) Which of the following is not considered part of marketing communication mix? b) Sales promotion
  - a) Advertising
  - c) Personal selling
- Q.2 Write short notes (any 4 out of 5)
  - 1) Globalisation
  - 2) Ethnic packaging
  - 3) Segmentation
  - 4) Social marketing mix
  - 5) 4 Cs

14

Max. Marks: 70

Q.3	<ul> <li>Short answer type questions(any 2 out of 3)</li> <li>1) What is meant by social marketing research?</li> <li>2) What do you mean by life cycle of cause?</li> <li>3) What are the functions of International donor agencies?</li> </ul>	14
Q.4	<ul><li>Descriptive type questions with internal choice(any one)</li><li>1) What is the importance of packaging in social marketing?</li><li>2) What are the social policies of marketing?</li></ul>	14
Q.5	<b>Descriptive type questions:</b> What is the spirit of social marketing? And explain the role of NGO's in social marketing.	14

Page **2** of **2** 

# SLR-OET-46

W	RUKAL DEVELOPMENT	RS(OET)
Day &	& Date: Friday, 28-04-2017 Max	(. Marks: 70
Time	: 10.30 AM to 01.00 PM	
	<ul><li>N.B. : 1) All questions are compulsory.</li><li>2) Figures to the right indicate full marks.</li></ul>	
Q.1	Multiple Choice Questions: (2 Marks Each)         1) is a type of writing.         a) Letter       b) Agenda         c) Memo       d) All of these         2) CV means         a) Curriculum Vitae       b) Course Vitae         c) Communication Vitae       d) None of these         3) is a type of feedback.         a) Negative       b) Positive         c) Stylus is used for         a) Writing       b) Listening         c) Speaking       d) None of these         5) is the sources in communication process.         a) Person       b) Internet         c) Both (a) & (b)       d) None of these	14 se
	<ul> <li>6) Bio data includes</li> <li>a) Nationality b) Experience</li> <li>c) Educational Qualification d) All of these</li> </ul>	
Q.2	<ul> <li>7) IN E-mail 'E' stands for</li> <li>a) Electronic b) Electrical d) None of these</li> <li>Write short notes (any four):</li> <li>1) Words</li> <li>2) Modern Tools of Writing</li> <li>3) Understanding the Subject</li> <li>4) Information Sources</li> </ul>	14
Q.3	<ul> <li>5) Group Discussion</li> <li>Short Answer Type Questions (any two):</li> <li>1) Describe stages of Public Speaking.</li> <li>2) Write down the use of references.</li> <li>3) What is Stress Management?</li> </ul>	14
Q.4	Descriptive Type Questions with internal choice: 1) What are the types of communication? OR	14
Q.5	<ul> <li>2) vvrite on topic 'Listening Ability'.</li> <li>Write an essay on topic 'Evolution and Development of Writing SI</li> </ul>	<ill' <b="">14</ill'>

M.A. (Semester - II) (New) (CBCS) Examination, 2017

## (मराठी रूपांतर)

	सुचना : 1) सर्व प्रश्न अ	नेवार्य आहेत.	
	2) उजवीकडील	अंक गुण दर्शवतात.	
प्र.1	योग्य पर्याय निवडा व उत्तरे लिहाः		14
	1. ——— हे लेखनाचा प्रकार आहे.	<b>N</b>	
	अ. पत्र	ৰ. अजडा	
	क. ममा	ड. यापका सव	
	2. सा. व्हा. म्हणज ———		
	अ. कारक्युलम वाइटा	ब. कास वाइटा	
	क. कम्युानकशन वाइटा	ड. यापका नाहा	
	3. —— ह प्राताक्रयचा प्रकार आह.		
	अ. नकारात्मक ब. सकारात्मक	क. ताडा ड. यापका सव	
	4. स्टायलस ह ––– साठी वापरल ज	เส.	
	अ. लखन	ब. एकण	
	क. बोलण	् ड. यापैकी नाही	
	<ol> <li>––– ह सवाद प्रक्रियतील स्त्रात 3</li> </ol>	गह.	
	अ. व्यक्ता	ब. इटरनट	
	क. दन्हि (अ) आणि (ब)	क. यापैकी नाही	
	6. बायोर्डटा मध्य ———— चा आतभोव	र होतो.	
	अ. राष्ट्रीयत्व	ब. अनुभव	
	क. शैक्षणिक पात्रता	ड. यापैकी सर्व	
	7. E-mail मध्ये E म्हणजे		
	अ. इलेक्ट्रोनिक	ब. इलेक्ट्रिकल	
	क. इंझी	ड. यापैकी नाही	
प्र.2	टिपा लिहा. (कोणत्याही चार)		14
	1. शब्द		
	2. लेखनाची आधुनिक साधने		
	3. विषयाची जाण		
	4. माहितीचे स्त्रोत		
	5. गट संवाद		
प्र.3	लघुत्तरी प्रश्न. (कोणतेही दोन )	-	14
	1. सार्वजनिक ठिकाणी बोलण्याचे टप्पे	विशद करा.	
	2. संदर्भाचे वापर लिहा.		
	3. ताण–तणाव व्यवस्थापन म्हणजे कार	प?	
प्र.4	दिर्घोतरी प्रश्न अंतर्गत पर्यायासह. (कोण	तेही एक)	14
	1. संवादाचे प्रकार कोणते आहेत?		
		अथवा	
	2. 'श्रवण क्षमता' या विषयावरती लिहा	Г.	
प्र.5	'लेखन कौशल्याचा उदय आणि विकास'	या विषयवर निबंध लिहा.	14

14

## **SLR-OET-48**

	MASS COMMUNICATION WRITING AND COMMUNICATION SKILLS (OET)			
Day	Day & Date: Friday, 28-04-2017 Max. Marks: 7			
Time	e: 10.30 AM to 01.00 PM			
	<ul><li>N.B.: 1) All questions are compulsory.</li><li>2) Figures to the right indicate full marks.</li></ul>			
Q.1	Multiple Choice Questions: (2 Marks Each)         1) is a type of writing.         a) Letter       b) Agenda         c) Memo       d) All of these         2) CV means         a) Curriculum Vitae       b) Course Vitae         c) Communication Vitae       d) None of these         3) is a type of feedback.         a) Negative       b) Positive         c) Oral       d) All of these	14 nese		
	<ul> <li>a) Writing</li> <li>b) Listening</li> <li>c) Speaking</li> <li>d) None of these</li> <li>5) is the sources in communication process.</li> <li>a) Person</li> <li>b) Internet</li> <li>c) Both (a) &amp; (b)</li> <li>d) None of these</li> </ul> 6) Bio data includes			
	<ul> <li>a) Nationality</li> <li>b) Experience</li> <li>d) All of these</li> </ul> 7) IN E-mail 'E' stands for <ul> <li>a) Electronic</li> <li>b) Electrical</li> <li>c) Easy</li> <li>d) None of these</li> </ul>			
Q.2	<ul> <li>Write short notes (any four):</li> <li>1) Words</li> <li>2) Modern Tools of Writing</li> <li>3) Understanding the Subject</li> <li>4) Information Sources</li> <li>5) Group Discussion</li> </ul>	14		
Q.3	<ul> <li>Short Answer Type Questions (any two):</li> <li>1) Describe stages of Public Speaking.</li> <li>2) Write down the use of references.</li> <li>3) What is Stress Management?</li> </ul>	14		
Q.4	<ul> <li>Descriptive Type Questions with internal choice:</li> <li>1) What are the types of communication?</li> <li>OR</li> <li>2) Write on topic 'Listening Ability'</li> </ul>	14		

Q.5 Write an essay on topic 'Evolution and Development of Writing Skill'

M.A. (Semester – II) (New) (CBCS) Examination, 2017

#### Seat No.

## (मराठी रूपांतर)

	सुचना : 1) सर्व प्रश्न अ	नेवार्य आहेत.	
	2) उजवीकडील	अंक गुण दर्शवतात.	
प्र.1	योग्य पर्याय निवडा व उत्तरे लिहाः		14
	1. ——— हे लेखनाचा प्रकार आहे.	<b>N</b>	
	अ. पत्र	ৰ. अजडा	
	क. ममा	ड. यापका सव	
	2. सा. व्हा. म्हणज ———		
	अ. कारक्युलम वाइटा	ब. कास वाइटा	
	क. कम्युानकशन वाइटा	ड. यापका नाहा	
	3. —— ह प्राताक्रयचा प्रकार आह.		
	अ. नकारात्मक ब. सकारात्मक	क. ताडा ड. यापका सव	
	4. स्टायलस ह ––– साठी वापरल ज	เส.	
	अ. लखन	ब. एकण	
	क. बोलण	् ड. यापैकी नाही	
	<ol> <li>––– ह सवाद प्रक्रियतील स्त्रात 3</li> </ol>	गह.	
	अ. व्यक्ता	ब. इटरनट	
	क. दन्हि (अ) आणि (ब)	क. यापैकी नाही	
	6. बायोर्डटा मध्य ———— चा आतभोव	र होतो.	
	अ. राष्ट्रीयत्व	ब. अनुभव	
	क. शैक्षणिक पात्रता	ड. यापैकी सर्व	
	7. E-mail मध्ये E म्हणजे		
	अ. इलेक्ट्रोनिक	ब. इलेक्ट्रिकल	
	क. इंझी	ड. यापैकी नाही	
प्र.2	टिपा लिहा. (कोणत्याही चार)		14
	1. शब्द		
	2. लेखनाची आधुनिक साधने		
	3. विषयाची जाण		
	4. माहितीचे स्त्रोत		
	5. गट संवाद		
प्र.3	लघुत्तरी प्रश्न. (कोणतेही दोन )	-	14
	1. सार्वजनिक ठिकाणी बोलण्याचे टप्पे	विशद करा.	
	2. संदर्भाचे वापर लिहा.		
	3. ताण–तणाव व्यवस्थापन म्हणजे कार	प?	
प्र.4	दिर्घोतरी प्रश्न अंतर्गत पर्यायासह. (कोण	तेही एक)	14
	1. संवादाचे प्रकार कोणते आहेत?		
		अथवा	
	2. 'श्रवण क्षमता' या विषयावरती लिहा	Г.	
प्र.5	'लेखन कौशल्याचा उदय आणि विकास'	या विषयवर निबंध लिहा.	14

Page **1** of **2** 

## SLR-OET-51

Seat	
No.	

#### M.Com. (Semester - II) (New) (CBCS) Examination, 2017 M.COM ENTREPRENEURSHIP (OET)

Day & Date: Friday, 28-04-2017

Time: 10.30 AM to 01.00 PM

**N.B.**: 1) All questions are compulsory.

2) Figures to the right indicate full marks.

## Q.1 Multiple Choice Questions: (2 Marks Each)

- 1) The resistance of employees in an organization against flexibility, growth and diversification can be overcome by developing
  - a) Entrepreneurshipc) Managerial domain b) Intrapreneurship
- For the success of business plan the goals should be \_\_\_\_\_
  - a) Limitless b) Generalized
  - c) Specific d) Imaginary
- 3) \_\_\_\_\_ is not an essential part of the contract.
  - a) All the parties involved should be named
  - b) Transaction should be describe in detail
  - c) Obtain signatures of the persons involved
  - d) Place where contract takes place
- 4) Normally sponsor links are used in \_\_\_\_\_ type of promotion.
  - a) Publicity b) Trade shows
  - c) Personal selling d) Internet advertising
- 5) \_\_\_\_\_\_ factors should be considered while assessing the space for business. b) Access from roadways to facility
  - a) Parking
  - d) All of the above c) Delivery rates
- 6) \_\_\_\_\_ work environments should be good for starting the new enterprises.
  - a) Finance and marketing c) Marketing and R&D
- b) Finance and R&D

d) Administrative domain

- d) Marketing and IT
- 7) is to be considered in economy while conducting environmental analysis.

  - c) Unemployment
- b) Disposable income
- d) Channel of distribution
- 8) is commonly used to measure the short-term solvency of the venture.
  - a) Debt to equity ratio
  - c) Profitability ratio
- b) Current ratio
  - d) Activity ratio

Max. Marks: 70

- 9) \_\_\_\_\_ is a barrier to new product creation and development.

  - a) Trial and error
    b) Opportunity parameter
    c) Opportunity cost
    d) Intrapreneurship culture

d) Intrapreneurship culture

- 10) Target market is \_\_\_\_\_\_a) A group of customers a venture reaches by accident
  - b) All consumers who purchase the venture's product
  - c) A specific group of potential customers towards which a venture aims its marketing plan
  - d) A chain of discount stores
- Capital rising entirely depends on the entrepreneur in \_\_\_\_\_
  - a) Corporation

b) Sole proprietorship

c) Partnership

- d) All of above
- 12) Developing a new idea through inquiry and testing is called \_\_\_\_\_
  - a) Heuristics

- b) Forced relationship
- a) Heuristicsc) Scientific method
  - d) Value analysis
- 13) A patent is granted for a specified amount of time because of the assumption
  - a) That during this time firm will cover its development costs
  - b) That firm will earn a sufficient profit during this period
  - c) To limit the monopoly of the firm
  - d) That it will stimulate idea and development of a better product

14)	measures how	efficiently <sup>-</sup>	the organizati	on is using its
assets.		-	-	-

- a) Liquidity Ratiosb) Leverage Ratiosc) Operating Ratiosd) Profitability Ratios

#### Q.2 Write short notes:

- 1) Mergers and Acquisitions
- 2) Characteristics of entrepreneur

#### Q.3 Write short answers:

- 1) State methods of generating ideas
- 2) Explain the terms Patents. Trademarks and Copyrights

#### Answer any one of the following questions: Q.4

- 1) What is entrepreneurial finance? Discuss various sources of finance for entrepreneurs?
- 2) Briefly explain about Women entrepreneurs and the challenges faced by them.

#### Q.5 Answer any one of the following questions:

14

14

14

- 1) What is functional plan? Explain in detail about steps in marketing plan for the new venture.
- 2) State role of entrepreneurship in economic development and the factors affecting on emergence of entrepreneurship.

Seat No.

## M.C.A. (SCI) (Semester – II) (New) (CBCS) Examination, 2017 M.C.A OFFICE AUTOMATION (OET)

Day & Date: Friday, 28-04-2017

Max. Marks: 70

10

Time: 10.30 AM to 01.00 PM

		<ul> <li>N.B.: 1) Q.(1) and (2) are compulsory.</li> <li>2) Answer any three questions from Q.3 to Q.7.</li> <li>3) All questions carry equal marks.</li> </ul>
Q.1	A)	Choose correct alternatives.1) CPU is considered as the of the computer.a) Brainb) Heartc) Softwared) None of these
		<ul> <li>2) A new presentation can be created from</li> <li>a) Blank Presentation</li> <li>b) From Existing Presentation</li> <li>c) From Design Template</li> <li>d) All of above</li> </ul>
		<ul> <li>3) A feature that displays only the data in column(s) according to specified criteria is called</li> <li>a) Formula b) Sorting c) Filtering d) Pivot</li> </ul>
		<ul> <li>4) The process of removing unwanted part of an image is called</li> <li><u>a</u>) Hiding</li> <li><u>a</u>) Bordering</li> <li><u>b</u>) Bordering</li> <li><u>c</u>) Cropping</li> <li><u>c</u>) Cutting</li> </ul>
		<ul> <li>5) Where footnotes appear in a document</li> <li>a) End of documentb) Bottom of a page</li> <li>c) End of Headingd) None of these</li> </ul>
		<ol> <li>The intersection of a column and a row on a worksheet is called</li> </ol>
		a) Columnb) Valuec) Addressd) Cell
		<ul> <li>7) Which of the following creates a drop down list of values to choose from?</li> <li>a) Ole Object b) Hyperlink</li> <li>c) Memo d) Lookup wizard</li> </ul>
		<ol> <li>software is collection of programs designed to operate, control, and extend the processing capabilities of the computer itself.</li> </ol>

a) System b) Application c) Window d) None of these
<ul> <li>10) Thefeature of MS Excel quickly completes a series of data. <ul> <li>a) Auto Complete</li> <li>b) Auto Fill</li> <li>c) Fill Handle</li> <li>d) Sorting</li> </ul> </li> <li>B) Fill in the blanks or true / false: <ul> <li>Ms Office is Application Software</li> <li>The Undo command in the Edit menu issued to reverse actions.</li> <li>It is not possible to insert an Excel sheet in a word document.</li> <li>d) It is not possible to animate different parts of a slide.</li> </ul> </li> <li>Q.2 A) Write short notes on the following <ul> <li>Difference between Save and Save As.</li> <li>Pivot Chart</li> </ul> </li> <li>B) Answer the following <ul> <li>Difference between Save and their functions.</li> <li>Explain Desktop icons and their functions.</li> <li>Explain Hyperlink object.</li> </ul> </li> <li>Q.3 Answer the following <ul> <li>Explain components of computer</li> <li>Explain Charts group in MS Excel.</li> </ul> </li> <li>Q.4 Answer the following <ul> <li>What do you mean by computer? Explain Applications of Computer.</li> <li>Explain any 5 objects of Insert Menu in MS PowerPoint.</li> </ul> </li> <li>Q.5 Answer the following <ul> <li>Explain computer software and Hardware.</li> <li>B) What is comment? Why it is used?</li> </ul> </li> <li>Q.6 Answer the following <ul> <li>A) What is Database? How to create form in MS Access?</li> <li>B) Write the Important features of MS PowerPoint?</li> </ul> </li> <li>Q.7 Answer the following: <ul> <li>A) Explain Priot Table in detail.</li> <li>B) Explain Page layout objects.</li> </ul> </li> </ul>			<ul> <li>9) Which of the following is not one of PowerPoint view?</li> <li>a) Slide show view b) Slide view</li> <li>c) Presentation view d) Outline view</li> </ul>	
<ul> <li>B) Fill in the blanks or true / false: <ol> <li>Ms Office is Application Software</li> <li>The Undo command in the Edit menu issued to reverse actions.</li> <li>It is not possible to insert an Excel sheet in a word document.</li> <li>It is not possible to animate different parts of a slide.</li> </ol> </li> <li>Q.2 A) Write short notes on the following <ol> <li>Difference between Save and Save As.</li> <li>Pivot Chart</li> </ol> </li> <li>B) Answer the following <ol> <li>Explain Desktop icons and their functions.</li> <li>Explain Desktop icons and their functions.</li> <li>Explain Hyperlink object.</li> </ol> </li> <li>Q.3 Answer the following <ol> <li>Explain Charts group in MS Excel.</li> </ol> </li> <li>Q.4 Answer the following <ol> <li>What do you mean by computer? Explain Applications of Computer.</li> <li>Explain any 5 objects of Insert Menu in MS PowerPoint.</li> </ol> </li> <li>Q.5 Answer the following <ol> <li>Explain computer software and Hardware.</li> <li>What is comment? Why it is used?</li> </ol> </li> <li>Q.6 Answer the following <ol> <li>What is Database? How to create form in MS Access?</li> <li>Write the Important features of MS PowerPoint?</li> </ol> </li> <li>Q.7 Answer the following: <ol> <li>Explain Pivot Table in detail.</li> <li>Explain Page layout objects.</li> </ol> </li> </ul>			<ul> <li>10) The feature of MS Excel quickly completes a series of data.</li> <li>a) Auto Complete</li> <li>b) Auto Fill</li> <li>c) Fill Handle</li> <li>d) Sorting</li> </ul>	
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