NALANDA OPEN UNIVERSITY
M.Sc. Physics, Part-I
PAPER–I
(Mathematical Physics)
Annual Examination, 2015

Time : 3 Hours. **Full Marks : 80**

Answer any Five Questions. All questions carry equal marks.

1. (a) Define orthogonal transformations.
   (b) Show that the eigenvalues of a Hermitian matrix are real.
2. Show that,
   (a) $\vec{A}\times\left(\vec{B}\times\vec{C}\right)=\left(\vec{A}\cdot\vec{C}\right)\vec{B}-\left(\vec{A}\cdot\vec{B}\right)\vec{C}$
   (b) $\left(\vec{A}\times\vec{B}\right)\times\vec{C}=\left(\vec{A}\cdot\vec{C}\right)\vec{B}-\left(\vec{B}\cdot\vec{C}\right)\vec{A}$
3. Prove that Poisson's brackets remain invariant with respect to canonical transformation.
4. Describe Bessel function and its properties. Find the integral representation of $J_n(x)$ for n being odd or even integer.
5. Write down Laguerre's differential equation. From the Laguerre's polynomial write down the values of $L_n(o)$, $L_o(x)$, $L_1(x)$ & $L_2(x)$.
6. Derive the following recurrence formulae for Hermite polynomials :—
   (a) $H_n''(x)=4n(n-1)\,H_{n-2}(x)$
   (b) $2x\,H_n(x)-H_{n+1}(x)=H_n'(x)$
7. State and explain clearly Fourier transform and the convolution theorem.
8. Define a cyclic group. Show that cyclic groups are abelian. Also prove that group of order three is always a cyclic group.
9. Determine metric tensor in (a) cylindrical (b) spherical polar co-ordinates.
10. Prove that δ_q^b is a mixed tensor of second rank. Write down the laws of transformation for the following tensors (a) C^m (b) A_k^{ij} (c) B_{ijk}^{mn}

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Examination Programme, 2015
M.Sc. Physics, Part–I

Date	*Paper*	*Time*	*Examination Centre*
11.05.2015	Paper–I	3.30 PM to 6.30 PM	Nalanda Open University, Patna
13.05.2015	Paper–II	3.30 PM to 6.30 PM	Nalanda Open University, Patna
15.05.2015	Paper–III	3.30 PM to 6.30 PM	Nalanda Open University, Patna
19.05.2015	Paper–IV	3.30 PM to 6.30 PM	Nalanda Open University, Patna
21.05.2015	Paper–V	3.30 PM to 6.30 PM	Nalanda Open University, Patna
23.05.2015	Paper–VI	3.30 PM to 6.30 PM	Nalanda Open University, Patna
25.05.2015	Paper–VII	3.30 PM to 6.30 PM	Nalanda Open University, Patna
27.05.2015	Paper–VIII	3.30 PM to 6.30 PM	Nalanda Open University, Patna

NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–II

(Quantum Mechanics)

Annual Examination, 2015

Time : 3 Hours. **Full Marks : 80**

Answer any Five Questions. All questions carry equal marks.

1. Define adjoint of an operator. Explain the properties of adjoint operator.
2. Show that,
   (a) $[L_z , L_+] = i\hbar\, L_+$
   (b) $[L_z , L_-] = i\hbar\, L_-$, where L_+ and L_- are ladder operators.
3. State and prove Ehrenfest's theorem in quantum mechanics. Explain the meaning of 'admissible wave function' and 'stationary state' in Quantum Mechanics.
4. Find the energy eigenvalues and energy eigenfunctions for a particle moving in a deep square well potential with rigid walls at x = 0 and x = L.
5. Describe time independent perturbation theory to get a good approximation to the non-degenerate energy eigenvalues.
6. Discuss the scattering of particles by a spherically symmetric potential. What do you mean by 'partial waves' and 'phase shift' ?
7. What are identical particles ? Give the significance of identicals particles in quantum mechanics. Discuss symmetrization procedure for 'bosons' and 'fermions'.
8. Set up Schrödinger equation for a one-dimensional harmonic oscillator and solve it to obtain its energy eigenvalues and eigenfunctions.
9. State and explain Fermi's golden rule. What do you understand by adiabatic and sudden approximation ?
10. Write short note on any ***Two*** of the following :—
    (a) Dirac delta function.
    (b) Expectation values.
    (c) Bra and Ket notations.
    (d) Laboratory and Centre of mass reference frames.

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NALANDA OPEN UNIVERSITY
M.Sc. Physics, Part-I
PAPER–III
(Electrodynamics & Plasma Physics)
Annual Examination, 2015

Time : 3 Hours. **Full Marks : 80**

Answer five questions in all, selecting at least Two Questions from each Group.
All questions carry equal marks.

Group–'A'

1. Convert all four Maxwell's equations into tensor form and hence show that they are covariant under Lorentz transformations .
2. (a) Prove that the D'Alembertian operator remains invariant under Lorentz transformation.
   (b) Express Lorentz force in covariant from.
3. Establish electromagnetic field tensor.
4. Deduce Larmour's formula for a non-relativistic accelerated charge.
5. Discuss the motion of charged particles in oscillating electromagnetic field.

Group–'B'

6. Describe a distribution function and also obtain an expression for the mean density of a plasma medium.
7. Explain Saha's theory of thermal ionization to determine the plasma ionization.
8. Derive an expression for plasma frequency from the mass conservation equation of continuity.
9. Derive formula for magneto-ionic refractive index. Discuss their application to ionosphere.
10. Obtain an expression for the Alfven speed. Explain the nature of Alfven wave and the requisite condition for its formation.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–IV

(Statistical Physics)

Annual Examination, 2015

Time : 3 Hours. **Full Marks : 80**

Answer any Five Questions.
All questions carry equal marks.

1. State and prove Liouville theorem. How is it analogous to the equation of continuity of an incompressible fluid ?

2. Compare and contrast the Maxwell-Boltzmann, Base-Einstein and Fermi-Dirac statistics.

3. What is phase transition ? Differentiate between the first order and the second order phase transitions. Discuss the Landau theory of phase transition.

4. Derive Fermi-Dirac distribution law.

5. Derive Virial equation of state and evaluate the virial coefficients.

6. What do you mean by cluster expansion ? Discuss the theory of cluster expansion.

7. (a) State and prove Nernst Heat theorem.
   (b) Prove that the total partition function of a molecule is $Z = Z_{translation} \cdot Z_{rotation} \cdot Z_{vibration}$.

8. What are critical indices ? Explain different scaling relations among the critical indices.

9. Describe two dimensional *Ising* model and show how does it explain the phenomenon of spontaneous magnetization.

10. Write short note on any ***Two*** of the following :—
    (a) Phase space and density of states.
    (b) Gibbs' paradox.
    (c) Microcanonical Ensemble.
    (d) Partition Function.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–V

(Nuclear and Particle Physics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Derive expression for the partial wave expansion of a plane wave.
2. What are electric and magnetic transitions in Gamma-ray emission? Explain multipolarity in Gamma-transition.
3. Define Q-value of a nuclear reaction. Establish the Q-equation of the nuclear reaction.
4. Explain "scattering length" and "effective range". Find a relation between these quantities on the basis of effective range theory of neutron-proton scattering.
5. Write a detailed note on the classification of elementary particles.
6. Discuss the quark model in detail. How does this model explain the Baryons and Mesons?
7. Discuss nature and properties of π-means? Show that the parity of π-mesons is negative.
8. Give a critical analysis of the spin dependence of nuclear forces. Justify your answer with substantive experimental facts.
9. Give the simple Briet-Wigner one level formula for the cross section of neutron reaction in nuclei. Explain how the width of the resonance level can be obtained from this formula.
10. What are stripping and pick up reactions? Obtain an expression for reaction amplitude using born approximation for stripping and pickup reaction.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–VI

(Atomic and Molecular Physics)

Annual Examination, 2015

Time : 3 Hours. **Full Marks : 80**

Answer five questions in all, selecting at least Two Questions from each Group.
All questions carry equal marks.

Group–'A'

1. State and explain Paul's exclusion principle and discuss how this principle is connected with the symmetry of the wave function.
2. Explain the phenomena of anomatoms Zeeman and Paschen-Back effects, give their theoretical explanations separately.
3. State the linear and the quadratic stark effects and give their suitable explanations. Show that the splitting increases with the increase of principal quantum number n.
4. Discuss the hyperfine structure of spectral lines. What light does this throw on the spin and magnetic moment of atomic nuclei ?
5. Write down the Schrödinger equation of one electron atom and solve it by the method of separation of variables. Explain the physical meaning of all the quantum numbers that appear.

Group–'B'

6. Discuss the theory of the intensity of the spectral lines of diatomic molecules treating them as non-rigid rotator. How is I_{max} related to the absolute temperature of the molecule.
7. Discuss the principal features of the electronic spectrum.
8. Present a brief note on NMR and ESR. Compare and contrast them.
9. Explain the origin of P, Q and R branches in the vibration-rotation spectra.
10. What is Roman effect ? Explain theoretically the observed characteristic of the Raman Spectrum of the diatomic molecules.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–VII

(Condensed Matter Physics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. In study of crystal structures, define the following terms :—
   (a) Crystalline, polycrystalline and amorphous states of solids.
   (b) Lattice, basis and crystal structure.

2. Define point group. Construct a two-dimensional pentagonal, heptagonal and octagonal lattice.

3. State and prove Bloch theorem. Explain the significance of the effective mass of the electron.

4. Define atomic scattering factor and geometrical structure factor. How are they related ? Using spherical polar co-ordinates, derive the general expression for the atomic scattering factor.

5. Describe the tight binding approximation for calculating the energy states of an electron in a solid.

6. Describe the Meissner effect. Mention the applications of superconductors.

7. What is a Fermi surface ? What are its main characteristics ? Discuss the effect of electric field and magnetic field on Fermi surface.

8. Derive Laue equations for diffraction of x-rays by a crystalline solid. Show that the Bragg's equation is a special case of the Laue equations.

9. Explain the Schottky and the Frenkel defects. Calculate the equilibrium concentration of each of the defects and indicate the order of their magnitude.

10. Give the qualitative description of the BCS theory. How does it account for the superconducting state ?

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For Practical Counselling Class & Practical Examination Programme Please See on Back Page.

NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-I

PAPER–VIII

(Electronic Devices)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Describe the design and operating characteristics of tunnel diode. What is meant by tunneling ?

2. Describe the design and working of IMPATT diode.

3. Describe the design of MOSFET and obtain an expression for dain current.

4. Explain transmissive and reflective type LCDs.

5. What are Pockels effect and a Pockels cell ? Explain the dynamics within the cell. Also, discuss the applications of Pockels cells.

6. State and explain
   (a) Electrostrictive effect.
   (b) Magnetostrictive effect.
   (c) Villari effect.

7. How can NMOS device be used to implement memory device ? Give the explanation.

8. What are Lyotropic Liquid Crystals ? Discuss generic progression of phases going from low to high amphiphile concentration.

9. (a) Describe electro optic effect in KDP crystals.
   (b) Referring to the Faraday effect and the magneto optic kerr effect, explain what is meant by magneto optic effect.

10. (a) Explain acousto optic effect. Mention the areas of its applications.
    (b) What are mesogens ? Give examples of mesogenic structures.

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For Practical Counselling Class & Practical Examination Programme Please See on Back Page.

NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–IX

(Computational Mathematics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Using Newton-Raphson formula, final a root of the equation $x\sin x+\cos x=0$.

2. Using the matrix inversion method, find the solution of the following set of algebraic equation $3x+y+2z=3,\quad 2x-3y-z=-3 \quad and \quad x+2y+z=4$.

3. Explain Monte Carlo Method. Describe various areas where this method is applied. Explain Monte Carlo Simulation and Monte Carlo Integration.

4. Using Newton's forward difference formula, derive a general formula for numerical integration and hence establish Simpson's One-third rule.

5. Use Runge-Kutta method to solve the differential equation $10\frac{dy}{dx}=x^2+y^2$ with $y(0)=1$ for the interval $0<x\le 0.4$ with $h=0.1$.

6. Use the finite difference formula for solving Poisson's equation, solve the following Poisson's Equation $\nabla^2 f=2x^2y^2$, over the square $0\le x\le 3$ and $0\le y\le 3$ with $f=0$ on the boundary and $h=1$.

7. Describe the 'Crank-Nicholson Method' to solve the parabolic differential equation. Give a suitable example.

8. Obtain the values of $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ for $x=1.2$ using data of this table :—

x	1.0	1.2	1.4	1.6	1.8	2.0	2.2
y	2.7183	3.3201	4.0552	4.9530	6.0496	7.3891	9.0250

9. Describe 'Nonlinear Curve Fitting Method' for a polynomial of the n^{th} degree to fit the given tata points.

10. Explain the use of the 'Cubic Spline Method' in numerical differentiation with illustrative examples.

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Examination Programme, 2015

M.Sc. Physics, Part-II

Date	Papers	Time	Examination Centre
05.06.2015	Paper-IX	3.30 PM to 6.30 PM	Nalanda Open University, Patna
09.06.2015	Paper-X	3.30 PM to 6.30 PM	Nalanda Open University, Patna
11.06.2015	Paper-XI	3.30 PM to 6.30 PM	Nalanda Open University, Patna
13.06.2015	Paper-XII	3.30 PM to 6.30 PM	Nalanda Open University, Patna
15.06.2015	Paper-XIII	3.30 PM to 6.30 PM	Nalanda Open University, Patna
17.06.2015	Paper-XIV	3.30 PM to 6.30 PM	Nalanda Open University, Patna
19.06.2015	Paper-XV	3.30 PM to 6.30 PM	Nalanda Open University, Patna
23.06.2015	Paper-XVI	3.30 PM to 6.30 PM	Nalanda Open University, Patna

NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–X

(Programming with Fortran & C^{++})

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. What is a computer programme ? Explain the terms : Machine Language, Compiler, Interpreter and Assembler. What is the difference between a hardware & a software ?
2. Write down the characteristics of a digital computer. How are these classified ? What do you mean by machine language and assembly language.
3. Explain integer and real data types representation in the Fortran Language with examples.
4. Define Arrays. Explain the declaration of arrays with example in Fortran Language.
5. What are special operators used in the C^{++} language to perform particular type of operation ? Discuss all such operators in detail.
6. What is a function ? List out the advantages and disadvantages of using functions in C^{++}. What do you mean by local and global variables ?
7. What is the relationship between a pointer and an array ? Explain how a pointer to function can be declared in C^{++}.
8. Write a program to initialize the members of a union and to display the contents of the union.
9. Explain the various functions involved in opening and closing a sequential file in C^{++}.
10. Write a programme in C^{++} to perform the following :—
    (i) Area of a Circle.
    (ii) Area of a triangle.
    (iii) Area of a rectangle.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–XI

(Physics of Nano-materials)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Using the collision-time concept, derive an expression for the electrical conductivity of a free electron gas. Does this result explain the experimental value of resistivity of a metal?

2. Explain the bond formation in the hydrogen molecule. What do you understand by energy bands in crystals ?

3. Classify crystalline solids into metals, semiconductor and insulators on the basis band theory. Explain the concept of effective mass of charge carriers.

4. Discuss the motion of electrons in two dimensional potential well and obtain expression for its density of states.

5. What is a quantum dot ? Discuss the structure and characteristics of different kinds of quantum dots. Give its optical properties.

6. What is a quantum wire ? Describe the various methods for its fabrication.

7. Describe the Hartree-Fock Approximation of the coulomb interaction between 3D confined electrons. Mention the application of Hund's rule in quantum dots.

8. Describe the citrate Precursor Technique for preparing nano-particles. Give the difference between the Bottom Up and the Bottom Down methods of preparation of nano-particles.

9. What do you mean by Multiferric Magnetoelectric materials ? Describe the applications of such materials.

10. Write short notes on any ***Two*** of the following :—
    (i) Plasma Arcing.
    (ii) Biological nano-particles.
    (iii) Super Lattice.
    (iv) Raman Spectra of nano-materials.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–XII

(Science and Technology of Renewable Energy)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Explain Photon flux, Spectral Irradiance and Radiant power density. Derive expression for Radiant power density.
2. What is meant by air mass and how is it related to standardized solar spectrum ? What are major atmospheric effects limiting the performance of photovoltaic applications ?
3. Discuss the efficiency of a solar cell and explain the importance of Fill Factor in a solar cell.
4. Derive expression for total current in (a) Wide-Base Diode and (b) Narrow-Base Diode.
5. Explain the perspectives of hydrogen energy in the World. Give an account of the pilot programmes. What are safety risks involved with the applications of hydrogen fuel ?
6. (a) What is geotherwial power ? Discuss its advantages and disadvantages.
   (b) Give the methods of harnessing (i) Wave energy & (ii) Tidal energy.
7. Explain surface texturing and light trapping mechanism for a Silicon Solar Cell. What is a Lambertian Rear Reflector ?
8. Explain minority carrier life time and diffusion length in single semiconductor crystal.
9. What do you understand by band gap ? Describe the formation of intrinsic carriers and their concentration variation with temperature.
10. Explain the impact of optical and recombination losses on quantum efficiency of an ideal and actual solar cell. How can the front and rear surface recombination be minimized in solar cells ?

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–XIII

(Environmental Physics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Discuss the clausius-clapeyron equation and global climatic change.
2. What do you mean by Baroclinic models ? What is Reynolds number R_e ?
3. What are the elements of weather and climate ? What is common between General Circulation Model (GCM) and Numerical Weathe Production (NWP) model ?
4. Explain Raman, Rayleigh and Mie scatterings. Distinguish between Raman and Mie scattering. Explain Resonance Raman scattering.
5. Discuss the diffusion of guest particles in a medium.
6. Discuss the improvement in diffusion equations to predict the transport of pollutants to a fair accuracy. What is Dupuit approximation ? Discuss.
7. Discuss the power from nuclear fission and nuclear fusion. How will you optimize the reactor size based on fission ?
8. What is urban Heat Island ? Explain the causes of Heat Island.
9. What do you mean by End-of-year cost and rest value ? Explain Building Times and Break-Even points with reference to conventional energy sources.
10. Discuss the working principle and properties of the Gratzel Cell.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–XIV

(Photonics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. Describe band gap and fill factor of a p-n cell. How does fill factor depend on the normalized open circuit voltage ?

2. Describe the three generation development of solar cell. What is a solar module ? Describe the natural limits of efficiency of a solar cell. What is the latest trend in solar cell development ?

3. Explain the origin of spiking in laser emission. Describe the principles of Nd-YAG laser. What are its applications ?

4. Explain the difference between analog and digital communication. What digital communication is more suitable with modern day requirements ?

5. Explain operating principle of a double heterojunction laser with suitable diagrams for layer structure and refractive index profile. Explain the role of such structure in confining charge carriers and optical power. What are quantum well lasers ?

6. What is mode locking operation in laser ? Prove that the output of mode locked laser in n times the power of the same laser with modes uncoupled. Describe a technique developed for achieving mode locking. What is passive mode locking ?

7. What do you mean by beats ? explain the concept of beats from acoustic to optical region. How does the beat formation help in deciding the changes in phase of laser source ?

8. Show experimental set up to obtain Ultra fast laser what are the uses of these ultra fast lasers ?

9. Obtain a relation between divergence and waist size of the beam for a Gaussian distribution of wave energy.

10. Describe Pulse Code Modulation (PCM) technique. Give a circuit diagram to illustrate the pulse modulation of a LED by analog input voltage with the corresponding explanation.

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NALANDA OPEN UNIVERSITY
M.Sc. Physics, Part-II
PAPER–XV
(Advanced Condensed Matter Physics)
Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. What are ionic crystals ? Explain the formation of an ionic crystal and obtain an expression for its cohesive energy.
2. Obtain dispersion relation for a one-dimensional crystal with two types of atoms and hence discuss the nature of optical and acoustic modes. Extend the results to three-dimensional crystal.
3. What is Mossbauer Effect ? Give an account of the quantum theory of Mossbauer Effect.
4. Derive equation of state for solids and obtain Gruneisen Law.
5. What is skin effect ? Distinguish between normal and anomalous skin effects. Give the mathematical theory of anomalous skin effect. How do you get information about Fermi surface with the help of this effect ?
6. Discuss the theory of interaction of electron with optical phonons in case of polar lattice.
7. Give an account of Ginzberg-Landan theory of the phenomenology of the superconducting state. How do you get Coherence length ?
8. Discuss A. C. Josepson effect. Show that the current oscillates with frequency $w = \frac{2eV}{\hbar}$.
9. What are cooper pairs ? Calculate the interaction energy of the electron pair.
10. Describe the inelastic scattering of neutrons. What are the two methods used for defining and measuring neutron energies ?

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NALANDA OPEN UNIVERSITY
M.Sc. Physics, Part-II
Practical Counseling and Practical Examination Programme, 2015
(Venue : Physics Lab, 1st Floor Biscomaun Tower, Patna-800001)

Counselling Class Programme		***Practical Examination Programme***		
Date	***Time***	***Paper***	***Date***	***Time***
30.07.2015 to 06.08.2015	11.30 AM to 5.30 PM	X	07.08.2015	11:30 AM to 2:30 PM
		XII	07.08.2015	2:45 PM to 5:45 PM
		XIV	08.08.2015	11:30 AM to 2:30 PM
		XV	08.08.2015	2:45 PM to 5:45 PM
		XVI	10.08.2015	11:30 AM to 2:30 PM

NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

PAPER–XVI

(Advanced Electronics)

Annual Examination, 2015

Time: 3 Hours. **Full Marks: 80**

Answer any Five Questions.
All questions carry equal marks.

1. (a) What is a differential amplifier ? Define the four types of configurations of differential amplifiers.
   (b) What are cascaded differential amplifiers ?
2. Describe a single input, balanced output amplifier. Find expressions for its voltage gain, differential input resistance and output resistance.
3. Draw the circuit diagrams and derive the expressions for output voltage of summing, scaling and averaging amplifiers in investing configurations.
4. Derive an expression for frequency of oscillation of Wien bridge oscillator. Show that the gain of this oscillator is three to make the loop gain unity and sustain oscillation.
5. What is shift register counter ? Discuss the working of any one shift register counter.
6. What is an adder circuit ? Explain the implementation of a half adder and a full adder circuits. Also, explain the difference between these.
7. How can op-amp. be used as voltage to current and current to voltage converters ?
8. What is a multiplexer ? Draw the logic circuit for four-to-one multiplexer. Write the Boolian equation and describe the truth table.
9. Describe basic hardware blocks of a compute.
10. Explain the architecture of 8086 microprocessor.

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NALANDA OPEN UNIVERSITY

M.Sc. Physics, Part-II

Practical Counseling and Practical Examination Programme, 2015

(Venue : Physics Lab, 1st Floor Biscomaun Tower, Patna-800001)

Counselling Class Programme		*Practical Examination Programme*		
Date	***Time***	***Paper***	***Date***	***Time***
30.07.2015 to 06.08.2015	11.30 AM to 5.30 PM	X	07.08.2015	11:30 AM to 2:30 PM
		XII	07.08.2015	2:45 PM to 5:45 PM
		XIV	08.08.2015	11:30 AM to 2:30 PM
		XV	08.08.2015	2:45 PM to 5:45 PM
		XVI	10.08.2015	11:30 AM to 2:30 PM