

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE



Official Publication of Sant Gadge Baba Amravati University

PART-TWO

Thursday, the 11th October, 2012
Notification

No.144/2012

Date :11/10/2012

Subject : Election of President & Secretary of University Students'
Council 2012-2013

Reference : Notification No. 134/2012 Dt.15.09.2012

It is notified for general information of all concerned that, following members of the University Students' Council are hereby declared elected as President & Secretary of the University Students' Council under the provision of section 40(4) (b) of the Maharashtra Universities Act 1994, read with the pertinent provisions of Direction No.4/97, 6/99, 15/2000 and 27/2003.

President : KU. SHEIKH SHIRIN YUSUF
P. G. DEPARTMENT OF CHEMISTRY,
SANT GADGE BABA AMRAVATI UNIVERSITY.

Secretary : SHRI. CHINCHAMALATPURE SAURABH RAJENDRA
BRIJLAL BIYANI SCIENCE COLLEGE, AMRAVATI.

Sd/-
(Dineshkumar Joshi)
Registrar,
Sant Gadge Baba Amravati University

अधिसूचना

क्रमांक १४५/२०१२,

दिनांक - 11/10/2012

विषय : उन्हाळी २०१३ लेखी परीक्षेच्या प्रस्तावित तारखा.

†. ~~आठवडा~~ दिनांक १८ मार्च, २०१३ पासून व पुढे सुरु होणाऱ्या परीक्षा.

(Annual Pattern पदवी अभ्यासक्रमाच्या प्रथम व तृतीय वर्षाच्या परीक्षा)

कला, समाजवि-गान, वि-गान, वाणिज्य, गृहवि-गान आणि शिक्षण (शारिरीक शिक्षण) विद्याशाखेतील स्नातक अभ्यासक्रमाच्या (त्रिवर्षीय अभ्यासक्रम) प्रथम व अंतिम वर्षाच्या सर्व परीक्षा, बी.एफ.ए.भाग-१ परीक्षा.

समाजकार्य प्रमाणपत्र परीक्षा, प्रादर्शिक कला स्नातक भाग १ व ३ परीक्षा, बी.बी.ए. भाग १ व ३ परीक्षा, बी.सी.ए. भाग १ व ३ परीक्षा. ग्रंथालय व वृत्तवि-गान स्नातक.

(Semester Pattern पदवी अभ्यासक्रमाच्या सर्व Odd Semester च्या खालील परीक्षा)

B.Sc. Sem.I, III, V B.C.A.Sem. I, III, V, LL.B.(5 Yr.), Sem.I, III, V, VII, IX, LL.B.(3 Yr.), Sem.I, III, V, B.F.D. Sem.I, III, V, B.Pharm.Sem.I, III, V, ग्रंथालयशास्त्र प्रमाणपत्र परीक्षा.

ब. सोमवार, दिनांक १५ एप्रिल, २०१३ पासून व पुढे सुरु होणाऱ्या परीक्षा.

(Annual Pattern पदवी अभ्यासक्रम द्वितीय वर्ष, पदव्युत्तर व पदविका अभ्यासक्रमाच्या परीक्षा)

कला, समाजवि-गान, वि-गान, वाणिज्य, गृहवि-गान आणि शिक्षण (शारिरीक शिक्षण) विद्याशाखेतील स्नातक अभ्यासक्रमाच्या (त्रिवर्षीय अभ्यासक्रम) द्वितीय वर्षाच्या सर्व परीक्षा व शिक्षण स्नातक (बी.एड.) परीक्षा, बी.एफ.ए.भाग-२ परीक्षा.

कला, समाजवि-गान, गृहवि-गान आणि शिक्षण विद्याशाखेतील (शारिरीक शिक्षण) पदव्युत्तर अभ्यासक्रमाच्या (वार्षिक पद्धती अभ्यासक्रम) सर्व परीक्षा., ग्रंथालय व माहिती वि-गान पारंगत परीक्षा, प्रादर्शिक कला स्नातक भाग २, बी.बी.ए. भाग २ परीक्षा, बी.सी.ए. भाग २ परीक्षा., शिगण प्रबंध पदविका, आर्थिक प्रबंध पदविका, करनिर्धारण पदविका आणि व्यवसाय प्रबंध पदविका परीक्षा, बी.एम.सी., BJMC परीक्षा, Dip. In Functional English परीक्षा., शिक्षण विद्याशाखेतील शारिरीक शिक्षण स्नातक (एक वर्षीय अभ्यासक्रम) व योग शिक्षण पदविका परीक्षा, Dip. In Yoga Therapy परीक्षा.,

वैद्यक विद्याशाखेतील (भेषजीसह) सर्व वार्षिक पद्धती परीक्षा (आयुशल्य स्नातक, भेषजी स्नातक, भेषजी पारंगत परीक्षा), आयुर्वेद विद्याशाखेतील परीक्षा, शिक्षण विद्याशाखेतील शिक्षण पारंगत परीक्षा.

क. गुरुवार, दिनांक २५ एप्रिल, २०१३ पासून व पुढे सुरु होणाऱ्या परीक्षा.

अभियांत्रिकी व तांत्रिकी विद्याशाखेतील स्नातक अभ्यासक्रमाच्या सर्व (वार्षिक व सेमिस्टर पद्धती) परीक्षा.

(Semester Pattern पदव्युत्तर व पदविके अभ्यासक्रमाच्या सर्व Odd Semester च्या परीक्षा व Semester Pattern पदवी अभ्यासक्रमाच्या सर्व Even Semester च्या परीक्षा)

P.G.Dip. in Sound Recording Sem- I & III, M.M.C.Sem-I/ M.J.M.C.Sem-I, M.Com. Sem.I & III, M.C.,M. Sem-I & III, M.I.R.P.M. Sem-I & III, M.B.A.Sem-I & III, PGDCCA, P.G.Dip.Computer Management Sem-I, B.Sc.(Home Science) Sem-II, IV,VI, B.Sc. Sem.II, IV, VI, B.C.A.Sem.II, IV, VI, B.F.D.Sem.II, IV, VI, LL.B.(5 Yr.), Sem.II, IV, VI, VIII,X, LL.B. (3Yr.), Sem.II, IV,VI, B.Pharm.Sem.II, IV,VI, Pharm.D.Part-I & II परीक्षा.

M.Tech.(Cosmetics) Sem-I.

M.Sc.Sem-I & III, P.G.Diploma in Web.Tech & Advanced Multimedia Sem- I & III, P.G.Dip. in Bio-diversity Sem- I & III, P.G.Dip. in Watershed Tech. & Management Sem-I, P.G.Dip. in Ground Water Exploration & Watershed Mgt. Sem- I & III. Diploma in Bio-Informatics, Dip. in Soil & Water Analysis, M.P.Ed.Sem.-I, & III, M.Pharm.Sem.-I, LL.M. Sem-I, III., P.G.Diploma in Human Rights Education, P.G.Diploma in Cyber Law, Taxation Law, Diploma in Labour Law, P.G.Diploma in Law, Medical Jurisprudence.

अभियांत्रिकी व तांत्रिकी विद्याशाखेतील पदव्युत्तर अभ्यासक्रमाच्या (M.E./M.Tech.) Odd Semester च्या सर्व परीक्षा, M.Sc.(A/E) Sem-I, III, F.Y.M.C.A. Sem-I, S.Y.M.C.A.Sem-I, T.Y.M.C.A.Sem.I, P.G.Dip. in Comp.Sci.Sem-I.

ड. मंगळ वार , दिनांक १० मे, २०१३ पासून व पुढे सुरु होणाऱ्या परीक्षा.

(Semester Pattern पदव्युत्तर व पदविका अभ्यासक्रमाच्या सर्व Even Semester च्या परीक्षा)

P.G.Dip. in Sound Recording Sem- II, M.M.C.Sem-II/ M.J.M.C.Sem-II

M.Com.Sem.II ,IV,M.C.,M. Sem-II & IV, M.I.R.P.M. Sem-II & IV, M.B.A.Sem-II & IV, P.G.Dip. in Comp.Mgt.Sem-II.

M.Sc.(Home Science) Sem.-II, M.Tech.(Cosmetics) Sem-II.

M.Sc.Sem-II & IV, P.G.Diploma in Web.Tech & Advanced Multimedia Sem- II & IV, P.G.Dip. in Bio-diversity Sem- II, P.G.Dip. in Watershed Tech. & Management Sem-II, P.G.Dip. in Ground Water Exploration & Watershed Mgt. Sem- II & IV., M.P.Ed.Sem.-II, IV, LL.M. Sem-II, M.Pharm.Sem.II.

अभियांत्रिकी व तांत्रिकी विद्याशाखेतील पदव्युत्तर अभ्यासक्रमाच्या (M.E./M.Tech.) Even Semester च्या सर्व परीक्षा, M.Sc.(A/E) Sem-II, IV, F.Y.M.C.A. Sem-II, S.Y.M.C.A. Sem-II, P.G. Dip. in Comp. Sci. Sem-II., वि-गान पारंगत परीक्षा.

(टीप :वरील परीक्षा सुरु होण्याचे तारखेचे दिवशी सार्वजनिक सुटी असल्यास परीक्षा त्यानंतरच्या दिवसापासून सुरु होईल.

आ-
प्र.परीक्षा नियंत्रक,

संत गाडगे बाबा अमरावती विद्यापीठ.



(Extra-Ordinary)

Wednesday, the 17th October, 2012

NOTIFICATION

No.:146/2012

Dated : 17/10/2012

**SUBJECT: CORRECTION TO THE SYLLABUS OF ELECTRONICS SUBJECT IN
PROSPECTUS NO. 2013121 OF B.SC. PART I (SEMESTER I & II)**

It is notified for general information of all concerned that, The prospectus No. 2013121 of B.Sc.I (Semester I & II) was published by the University for the session 2012-13. In the above prospectus the syllabus printed for the subject Sr.No. 22 “ Electronics” on page No. 66 to 69 for Semester I & page No. 151 to 156 for semester II respectively shall be substituted by the revised syllabus appended herewith as an “Appendix A” to be implemented Winter 2012 examination for Semester I and Summer 2013 examination for Semester II.

Sd/-
(Dineshkumar Joshi)
Registrar,
Sant Gadge Baba Amravati University

Appendix-A

**22.ELECTRONICS
General Provisions/Instructions**

Part A

- (i) The Examination in Electronics of each semester shall comprise of one theory paper of 80 marks of three hours duration and internal assessment of 20 marks.
- (ii) Theory paper of each semester shall comprise of six units. Each unit shall be completed in maximum 15 teaching periods of 48 minutes duration.
- (iii) There shall be six questions of twelve marks on each unit with alternate choice and One compulsory question (08 subquestions of 01 mark each) of 08 marks covering syllabi of all units (short answer type).

Part B

- (i) The Practical examination of each semester of the B. Sc. (Electronics subject) shall be of 50 marks of 4 hours duration and shall be held at the end of each semester at the places as decided by the university.
- (ii) Distribution of 50 marks assigned to practical for (Semester I to V) is as under-

1. Experiment (Construction, testing and performance)	: 30 Marks
2. Practical record	: 10 Marks
3. Viva-voce	: 10 Marks

Total : 50 Marks	
- (iii) Project will be given to a group of not more than four students.
- (iv) Teacher may adopt any innovative practice for demonstration of practicals on the aspects given.
- (v) College/ Department may prepare laboratory manuals of experiments

Semester I

1S-Electronics

Basics of Electronics

Unit I : Passive Components and Network theorems

Introduction to Resistors, Capacitors, Inductors and Transformers, Concept of ideal dc voltage and current source, KVL, KCL, Thevenin's, Norton's, maximum power transfer, Millman's theorem (statement, proof, simple numerical application for dc only).

UNIT II: Measuring Instruments :

Principles of voltmeter, ammeter, ohmmeter, Multirange DC voltmeter, ohm per volt rating, loading effect, Multirange DC Ammeter, Series & shunt type ohmmeter, Multimeter (uses & drawback). CRO Block diagram & explanation, CRT construction & working, uses of CRO (measurement of frequency, amplitude & phase.)

Unit III: Semiconductor Diode and Regulated power supply:

Operation and characteristics of PN junction diode, Avalanche and Zener breakdown mechanism, Half wave and full wave rectifiers (ripple factor, efficiency, PIV ratings), C, L and π filters, Concept of unregulated and regulated power supply, Zener diode voltage regulator, Three terminal IC regulator.

Unit IV : Bipolar Transistors:

NPN and PNP transistor (construction and working) CB, CE & CC configuration, leakage currents, Input and output characteristics of CE mode, relation between α and β , Load line and operating point, Amplification action of CE amplifier, biasing and stability, Self and fixed bias circuit.

Unit V : Switching and Optoelectronic devices :

Construction, working and characteristics of FET, MOSFET, UJT, SCR, relation of FET parameters, Construction, working & characteristics of LDR, LED, photodiode, photovoltaic cell(Solar cell).

Unit VI : Integrated Circuits:

Introduction to IC technology, advantages and disadvantages, Classification of ICs, Basic steps in fabrication of monolithic ICs, Fabrication of diode, resistor & transistor. Scale of integration upto V²LSI, Basic concept of Embedded systems.

Books Recommended:

- 1) Basic electronics by B.L. Thereja (S.Chand and Company)
- 2) Digital and Analog technique by Navneet, Kale and Gokhale
- 3) Element of electronics by Bagde and Singh (S.Chand and Company)
- 4) Principles of electronics by V.K.Mehta
- 5) Introduction to digital electronics by Mohinder Singh
- 6) Electrical and electronics measurement and Instrumentation by A.K. Sawhney
- 7) Text book of Electrical Technology by B.L. Thereja

Practicals: Minimum Ten experiments at least one on each of the following aspects.

1. Active and Passive components.
2. Network theorems, voltmeter, Ammeter, ohmmeter multimeter and CRO.
3. Regulated power supply, rectifiers, filters, IC regulators.
4. Bi-polar devices and its applications.
5. Uni-polar and optoelectronic devices and its applications.
6. IC testing, IC know how, IC connection, simple IC circuits, mounting of IC on PCB and checking of voltage at each pin.

Semester II
2S-Electronics
Digital Electronics

Unit I : Binary Arithmetic & Logic gates :

Binary, Octal & Hexadecimal number system and their inter- conversion, Binary arithmetic (addition and subtraction using 1's & 2's compliment), multiplication & division. Binary codes : 8421 BCD, Excess-3 & Gray code.

NOT, OR, AND, NAND, NOR gates (definition and truth table). EXNOR & EXOR gates, Half adder, full adder , 4 bit binary full adder.

Unit II : Boolean Algebra & Logic families:

Boolean laws, De-morgans theorem, Simplification of Boolean equations using Boolean algebra, Fundamental products & sum terms, K-map (K-map upto 4 variable).

Classification of logic families, characteristics (Fan-in, Fan-out, Noise immunity, Propagation delay, Power dissipation), DTL, TTL & CMOS logic.

Unit III : Multivibrators and Flip Flops:

Construction & working of Astable, monostable and Bistable transistorised multivibrators, RS, CK-RS, D, JK, JKMS and T Flip Flops (Logic diagram, Truth table, construction & working), Concept of edge trigger Flip-Flop, Concept of preset & clear terminal.

Unit IV : Counters and Shift registers:

Asynchronous & synchronous Counter, Up-down counters (up to 4-bits), modified asynchronous counter (Mod -7 ,Mod-10, and Mod-13).

Types of shift registers, SISO, SIPO, PISO & PIPO, IC version of Mod -10 shift registers (Construction & working), IC version of shift register – 7495, Application of shift register. Ring counter, Johnson's counter.

UNIT V : Combinational logic circuit:

Encoder: Binary to BCD, Decimal to BCD, IC 74147, Decoder: 2 to 4 line, BCD to decimal, BCD to 7 segment, IC 7447, Multiplexer: 4X1, 8X1, De multiplexer: 1X4, 1X8, (Definition, construction, operation and application of above)

Unit VI : Semiconductor Memories:

Concept of memory, primary and secondary memory, classification of memories, volatile and non volatile memories, memory Hierarchy, semiconductor memory: RAM, ROM, PROM, EPROM, EEPROM, flash memory.

Books Recommended:

1. Digital and analog technique by Navneet, Kale and Gokhale (Kitab mahal prakashan)
2. Introduction to digital electronics by Mohinder Singh
3. Digital principle and application by Malvino and Leach
4. Modern digital electronics by R. P. Jain
5. Pulse, digital and switching waveforms by Millman and Taub

Practicals: Minimum Ten experiments at least one on each of the following aspects.

1. Half adder, full adder, code converter, Identification and verification of logic gates, 4-bit binary full adder(IC versions)
2. De'Morgan's theorems, K-map, TTL and CMOS logic, knowing characteristics of logic families.
3. Transistorized Astable, Bistable and monostable multivibrator, JK and JKMS flipflops, Data Flipflop, RS , CK RS Flipflop.
4. 4-bit binary counter, modifying counter, ring and Johnson's Counters (Using ICs), SISO, SIPO, PISO and PIPO.
5. Decoder, multiplexer, IC74147 mounting and testing.
6. Study of memories.

NOTIFICATION

No.:147/2012

Dated : 17/10/2012

**subject :Correction to the syllabus of Eletronics subject in prospectus
No. 2013122 of B.Sc. Part II (Semester III & IV)**

It is notified for general information of all concerned that, the prospectus No. 2013122 of B.Sc. II (Semester III & IV) was published by the University for the session 2012-13. In the above prospectus the syllabus printed for the subject Sr.No. 16 “ Electronics” on page No. 106 to 108 for Semester III & page No. 109 to 111 for Semester IV respectively shall be substituted by the revised syllabus appended herewith as an “Appendix A” to be implemented Wnter 2012 examination for Semester III and Summer 2013 examination for Semester IV.

Sd/-
(Dineshkumar Joshi)
Registrar,
Sant Gadge Baba Amravati University

Appendix-A

**16.ELECTRONICS
General Provisions/Instructions**

Part A

- (i) The Examination in Electronics of each semester shall comprise of one theory paper of 80 marks of three hours duration and internal assessment of 20 marks.
- (ii) Theory paper of each semester shall comprise of six units. Each unit shall be completed in maximum 15 teaching periods of 48 minutes duration.
- (iii) There shall six questions of twelve marks on each unit with alternate choice and One compulsory question (08 subquestions of 01 mark each) of 08 marks covering syllabi of all units (short answer type).

Part B

- (i) The Practical examination of each semester of the B. Sc. (Electronics subject) shall be of 50 marks of 4 hours duration and shall be held at the end of each semester at the places as decided by the university.
 - (ii) Distribution of 50 marks assigned to practical for (Semester I to V) is as under-
 1. Experiment (Construction, testing and performance) : 30 Marks
 2. Practical record : 10 Marks
 3. Viva-voce : 10 Marks
- Total : 50 Marks
- (iii) Project will be given to a group of not more than four students.
 - (iv) Teacher may adopt any innovative practice for demonstration of practicals on the aspects given.
 - (v) College/ Department may prepare laboratory manuals of experiments

**3S-Electronics
Electronic Devices and Circuits**

Unit I : Hybrid-parameters & Cascaded amplifiers:

Hybrid-parameters, transistor equivalent circuit of CE,CB, Analysis of small signal CE amplifiers. Concept of cascaded amplifier, Types of coupling, RC Coupled Amplifier, Single Tuned amplifiers,

Unit II : Power Amplifier:

Classification of power amplifier, Class A, Class B, Class C and Class AB amplifiers, Class A - transformer coupled amplifier, Class-B push-pull amplifier (Construction, working and efficiency of each). Distortion, complementary symmetry Class-B push-pull amplifier.

UNIT III: Feedback amplifiers and Oscillators:

Concept of feedback, feedback theory, positive and negative feedback, advantage of negative feedback, physical idea of feedback,(Block diagram only),concept of oscillator, basic elements of oscillator, Barkhausen Criteria of oscillation, concept of tank circuit. RC oscillator-Phase shift and Wein bridge oscillator, LC oscillator- Colpitts and Hartley oscillator, Crystal oscillator.

UNIT IV: Operational amplifier and applications:

Difference amplifier(concept, construction and working), block diagram of operational amplifier, characteristics of ideal op amp, concept of virtual ground, parameter of op amp (input impedance, output impedance, open loop gain, close loop gain, CMRR, slew rate, input offset voltage and current, input bias current). Applications: Op amp as inverting and non inverting amplifier, adder, Subtractor, Differentiator and Integrator.

UNIT V: Advance applications of Op- Amp:

Solution to simultaneous equation, differential equation for harmonic, damped harmonic oscillator, regenerative comparator, logarithmic amplifier, Astable, Monostable and Bistable multivibrator and its time period (construction and working).

UNIT VI: A/D and D/A converter:

Need of A/D and D/A converter.

D/A converter: R-2R ladder type, Weighted resistor, sample and hold circuit, IC ADC, DAC specification.

A/D converter: Single and Dual slope, counter type, successive approximation type, specification, Numerical based on A/D and D/A Converter

Books Recommended:

1. Integrated Electronics by Millman Halkias
2. Principle of electronics by V.K.Mehta
3. Element of electronics by Bagde and Singh
4. Linear integrated Circuits by Ramakant Gaikwad
5. Digital principle and application by Malvino and Leach
6. Basic electronics by B.L.Thereja (S.Chand and Company)
7. Op-Amp Theory and application by Ramakant Gaikwad

Practicals: Minimum Ten experiments at least one on each of the following aspects.

1. CE, CB and CC amplifiers, cascaded amplifiers.
2. Power amplifiers.
3. Oscillators.
4. Op-Amp applications.
5. Op-Amp in Astable, Monostable and Bistable mode.
6. ADC and DAC converter

4S-Electronics

Communication Electronics & Microprocessor 8085

Unit I : Modulation and Demodulation:

Need for modulation, AM theory, Power relation, Theory of FM ,Numerical on AM and AM Systems , frequency spectrum of FM . Generation of AM and FM . Collector modulator , diode reactance modulator . Demodulator: diode detector , slope detector.

Transmitter and receiver :Block diagram and working of AM and FM transmitter and receiver.

UNIT II: Fiber Optic Communication :

Introduction ,advantages of OFC , types of fibers ,internal reflections ,numerical aperature. Optical Sources : Semiconductor injection LASER , LED ,(power and efficiency chacteristics). Optical detectors : Photodiode ,PIN diode , Phototransistor .

Optical fiber connection : Jointer and coupler ,fiber alignment and joint losses ,connector couplers.

UNIT III: Pulse Modulation and Digital Communication

Pulse Modulation, Sampling Theorem PAM ,PWM ,PPM and PCM (Bandwith of PCM ,Quantizing Noise) , application of PCM , Multiplexing Principles : TDM and FDM , Comparison of FDM and TDM .

UNIT IV: Architecture and timings of 8085:

Evolution of microprocessor, microcomputer (Block diagram with function of each block),architecture of Intel 8085 microprocessor, function of each block of 8085, Functional pin diagram and function of all pins of 8085, instruction format. Instruction cycle, fetch and execute operation, machine cycle and state, timing diagram of MOV and MVI instructions.

UNIT V: Instruction and programming of 8085:

Addressing mode, classification of instruction set of 8085 with examples, concept of stack and stack pointer, PUSH and POP instruction, Concept of subroutine: CALL and RET instruction, Delay subroutine (using one register and register pair).

Programming: Algorithm, Flowchart, Assembly and machine language, assembly language program such as programme for addition, subtraction, multiplication, division, finding maximum and minimum numbers etc.

UNIT VI: Interfacing:

Basic interfacing concept, memory mapped I/O and I/O mapped I/O Schemes, data transfer schemes.

8255PPI: block diagram, function of each block, Functional pin diagram, , function of each pin, operating modes of 8255PPI, control word format in I/O and BSR mode, illustrative example.

Books recommended:

1. A Text Book of Communication Engineering by A.Kumar
2. Electronics communication by Roddy and Coolean
3. Telecommunication principle circuit and system S.Rambhadran
4. Modern digital and analog communication system by B.P.Rathi
5. Communication electronics by N.D.Deshpande
6. Microprocessor and microcomputer By B.Ram
7. Microprocessor architecture, programming and application by Ramesh Gaonkar
8. Introduction to Microprocessor by A.P. Mathur

Practicals: Minimum Ten experiments at least one on each of the following aspects.

1. AM and FM (Transmitters and Receivers) TRF and superheterodyne receivers, collector modulator
2. OFC system.
3. Pulse Modulation and Digital Communication.
4. Microprocessor 8085 and its study.
5. Programming on microprocessor 8085.
6. Interfacing techniques.