FEDERAL PUBLIC SERVICE COMMISSION (Curriculum & Research Wing)

Scheme and Syllabi for Screening/ Professional Tests Relating to Posts Advertised Vide Consolidated Advertisement No. 11/2014

For Each Case
No. of Paper : 1
Marks : 100

Time Allowed: 100 Minutes

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
1.	167/2014	Veterinary Officer (BS-17), Remount Veterinary and Farms Corps, Ministry of Defence.	Veterinary Graduate. (Registration with Pakistan Veterinary Medical Council).	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring Part-II Preventive Medicine, Veterinary Pathology, Veterinary Parasitology, Veterinary Microbiology, Animal Nutrition, Animal Breeding & Genetics, Livestock Management, Poultry Husbandry, Animal Reproduction,
2.	210/2014	Assistant Director (BS-17), Directorate of Dock Workers Safety Headquarters, Karachi, Ministry of Ports and Shipping.	 i. Bachelor's degree in Mechanical or Electrical Engineering. ii. Two (2) years post qualification experience of testing appliances/inspection of loading/ discharging of cargo on ports. iii. Knowledge of Labour Laws, Dock Labourers Act and the Pakistan Dock Labourers Regulations. 	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	 Infectious Diseases of Bovines & Poultry. Part-I Vocabulary, Grammar usage, Sentence Structuring Part-II Safety and Efficiency Measures Common Types of Electrical and Mechanical Hazards Destructive and Non-Destructive Methods of Wire Testing Methods of testing of safe working load of a crane Knowledge of Labour Laws (National/International/Maritime), Knowledge of Dock Labourers Act 1934 Knowledge of Pakistan Dock Labourers Regulations, 1948
3.	211/2014	Nautical Instructor (BS-19) Pakistan Marine Academy, Karachi, Ministry of Ports and Shipping.	 i. Certificate of Competency OR Certificate of service as Master of Foreign-going ships. ii. At least two (2) years post qualification experience in Command OR three (3) years post qualification experience as Second-in Command/Chief Officer of ships. 	Objective Type Test (MCQ) Professional Test = 100 marks	 Professional Theoretical Instructions in the Classroom Practical Instructions in General Seamanship Training visits alongwith Cadets Planning and Development of Training Courses and Material Classroom Management and Discipline

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
4.	213/2014	Trained Graduate Teacher Botany/Zoology (Male) (BS-16), F.G. English Medium Public Schools, Directorate of Federal Government Educational Institutions, (Cantts/ Garrisons), Ministry of Defence.	 i. Second Class or Grade 'C' Bachelor's Degree in Botany/Zoology. ii. B.Ed. 	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Biased = 40 marks Part-III Job Oriented = 40 marks	Part-I Vocabulary, Sentence Structuring Part-II (Bachelor's Level) Viruses & Algae Bryophyte Plant anatomy Protozoa Arthropoda Mollusca Porifera Part-III Education System in Pakistan, Educational Psychology and Student's learning. Class Room Management and Discipline, Instructional Planning and Teaching Strategies, Students Evaluation and Examination System, Educational Guidance and Counselling.
5.	214/2014	Headmistress (BS-18), F.G. Urdu Medium Female Schools, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry Of Defence.	 i. Second Class or Grade 'C' Master's Degree. ii. M. Ed/ Second Class B.Ed. iii. Five (5) years post qualification teaching and administrative experience in an educational institution. 	Objective Type Test (MCQ) _Professional Test=100 marks	 Perspectives of Education in Pakistan Educational Administration and Supervision, Educational Psychology and Student's learning. Educational Guidance & Counselling Classroom/Institutional Management and Discipline Development of Curriculum and Instructional Material Teaching Techniques & Methodology Testing & Evaluation Educational Technology Educational Reforms in Pakistan
6.	215/2014	Assistant Private Secretary (BS-16), Ministry of Planning, Development and Reform.	 i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC ii. Minimum shorthand speed 100 w.p.m. and typing speed of 50 w.p.m. iii. Must be computer literate. Note: A Computer literacy test (Practical) will be conducted comprising use of Microsoft Word and Excel 	Typing Test with minimum S Shorthand Test with minimum S Computer Literacy Test: i Microsoft Word (Typing ii Microsoft Excel (Typing S) ii Microsoft Excel (Typing S) iii Microsoft Excel (Typing S)	Speed of 50 W.P.M um Speed of 100 W.P.M 40 Marks 40 Marks 40 Marks 10 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
7.	216/2014	Senior Teacher, Chemistry (Male) (BS-17), Federal Educational Institutions, Federal Directorate of Education, Capital Administration and Development Division.	Second Class or Grade 'C' Master's degree in Chemistry with B.Ed./M.Ed.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring Part-II (Masters Level) Chemical Kinetics, Chemical Equilibrium, Quantum Theory of Atom, Synthetic Chemistry & Polymers, Reaction Mechanism, Green Chemistry, Spectroscopy, Nano Technology, Colloidal State. Part-III Educational Psychology and Student's learning. Development of Curriculum and Instructional Material Educational Measurement and Evaluation Teaching Methods and Techniques Classroom Management and Discipline Development of Education in Pakistan.
8.	217/2014	Civilian Medical Practitioner (BS-17), Ordnance Corps, Ministry of Defence.	MBBS or equivalent qualification recognized by the PMDC.	Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring. Part-II Core Subjects of MBBS Programme Health Policy of the Government. Care Vs Cure for Health Management
9.	218/2014	Mechanical Engineer (BS-18) Pakistan Marine Academy, Karachi, Ministry of Ports and Shipping.	 i. Degree in Mechanical Engineering from a recognized university. ii. Five (5) years post qualification teaching experience in any Technical Establishment or Technical College/Institute. 	Objective Type Test (MCQ) Part-I Subject Test = 70 marks Part-II Professional Test=30 marks	Heat Transfer Thermodynamics Industrial Materials Machine Design and Drawing Mechanics of Machines Production Management & Quality Control Maintenance of generators, workshops, stores, machinery & equipments. Hydraulic Machines Part-II Teaching Techniques and Methodology Classroom Management and Discipline Testing and Evaluation

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
10.	219/2014	Research Superintendent (BS-16), Pakistan Public Administration Research Centre, Management Services Wing, Establishment Division	 i. Second Class or Grade 'C' Bachelor's Degree or equivalent qualifications in Public Administration/Administrative Science/Political Science/Economics. ii. Five (5) years post qualification Administrative/ Research Experience. 	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Vocabulary, Sentence Structuring Part-II Human Resource Planning and Management Recruitment and Selection Civil Servants Act, 1973 and Rules made thereunder Rules of Business, 1973 Public Procurement Rules, 2004 Research Techniques/ Methodology Report Writing Basic knowledge of Computer/IT.
11.	220/2014	Inspector (BS-16), Anti Narcotics Force, Narcotics Control Division, Ministry of Interior & Narcotics Control.	 i. Second Class or Grade 'C' Bachelor's Degree or equivalent qualification recognized by the Higher Education Commission. ii. Two (2) years post qualification experience in Law Enforcement Agency/ Security Agency. 	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Vocabulary, Sentence Structuring Part-II Investigation Chapter of Criminal Procedure Code, Basic knowledge of "Qanun-e-Shahadat Order", 1984 Basic knowledge of Pakistan Penal Code, Basic knowledge of Narcotics Substances Act,1997 International Conventions and Agreements on Drug Control. Role of United Nations Organization for Drug Control (UNODC) Role of Pakistan's Anti Narcotics Control Setup in Drug Control Sources of Terrorist Financing Basic Arithmetic Current Affairs, Pakistan Affairs & Islamic Studies.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
12.	225/2014	Statistical Officer (BS-17), Military Hospitals, Ministry of Defence.	 i. Second Class or Grade 'C' Master's Degree in Statistics / Economics with Statistics / Mathematics with Statistics. ii. Two (2) years post qualification experience in Statistical Work. 	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test = 80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring. Part-II Introduction to Statistics, Presentation of Data, Measures of Central Tendency, Measures of Dispersion, Index Numbers, Simple Regression and Correlation, Time Series Analysis, Sampling Techniques, Testing of Hypothesis, Techniques of Research, Report writing and presentation, Basic Arithmetic and I.T Knowledge.
13.	226/2014	Assistant Librarian (BS-16), Federal Government Polyclinic, Capital Administration and Development Division.	Second Class or grade 'C' Bachelor's degree with diploma in Library Science OR Bachelor of Library Science.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Sentence Structuring Part-II Introduction to Library & Information Science Information Sources and Services Classification: Theory and Practice Cataloguing: Theory and Practice Procurement and Maintenance of Library Books Management of Libraries & Information Centres Library Automation/Information Storage & Retrieval Research Methods & Techniques for Librarians Public Records, Rare Material & their Conservation Management of Serials Publications Rules & Procedure regarding Write Off the Library Losses
14.	228/2014	Assistant Mechanical Engineer (BS-17), Mechanical Engineering Department of Pakistan Railways, Railway Board, Ministry of Railways.	 i. Bachelor's degree in Mechanical Engineering or equivalent qualification. ii. Valid Registration with PEC on or before the closing date required. 	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II Industrial Materials Machine Design and Drawing Mechanics of Machines Production Management & Quality Control Workshop Technology Hydraulic Machines Mechanics and Strength of Materials Manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Welding, Drilling

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
15.	229/2014	Accupuncture Specialist (BS-18), Federal Government Polyclinic, Capital Administration and Development Division.	 i. MBBS or equivalent qualification recognized by the PM&DC ii. Five (5) years post qualification experience including one (1) year as Acupuncture Specialist after obtaining a diploma in that speciality duly recognized. 	Objective Type Test (MCQ) Professional Test=100 marks	 Core courses of MBBS degree program. Core courses of diploma in Accupuncture Care vs. Cure for Health Management Targets and achievements of Health Policy of the Government, Hospital Administration Future plans of the government for health services to Public.
16.	230/2014	2 nd Engineer (Electronics/ Electrical) (System Engineer Calibration) (BS-18), Pakistan Navy, Ministry of Defence.	 i. Bachelor of Engineering in Electrical/ Electronics/ Computer or equivalent from the recognized University. ii. Five (5) years post qualification experience in Govt./ Semi-Govt./ or a firm of repute in repairs/ calibration of Test Measuring Diagnostic Equipment(TMDEs). 	Objective Type Test (MCQ) Professional Test=100 marks	 Power Electronics, Digital Electronics, Electronic Devices And Structure, Calibration of Test Measuring Diagnostic Equipments, Electric Circuits, Semiconductor Devices, Communication Systems, Radar Systems, Operational Amplifiers, Electronic/ Electrical Instrumentation, Oscillators, Logic Design & Switching Theory, Circuit Theory Rules and Instructions of Repairs of the Multilayer Printed Circuit Boards Use of Specialized Diagnostic Test Equipments, Handling of Programmable ICs.
17.	231/2014	Associate Professor, Islamic Studies (Female) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence.	Ph.D. Degree in Islamic Studies with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in Islamic Studies with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in Islamic Studies with twelve (12) years post qualification teaching and administrative experience at College/ University level.	Objective Type Test (MCQ) Part-I Subject Test = 70 marks Part-II Professional Test=30 marks	Part-I (Masters Level) Text of Quran, Hadith & Fiqah Principles & History of Interpretation of Holy Quran Principles & History of Hadith Principles & History of Islamic Legislation Principles of Current Implementation of Islamic Law Political & Social Thoughts of Islam Comparative Studies of Religions Islamic Socio-Economic System Islamic Movement & their Impact Islam & Modern Economic Thoughts Part-II Research Methodology and Report Writing Educational Planning and Management Development of Curriculum and Instructional Material Institutional Management & Discipline Educational Psychology and Student's learning

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
18.	232/2014	Neonatologist (BS-18), Federal Government Polyclinic, Capital Administration and Development Division.	 i. MBBS or equivalent qualification recognized by the PMDC. ii. Postgraduate higher diploma with three (3) years post qualification clinical experience in the speciality OR Postgraduate lower diploma with five (5) years post qualification clinical experience in the speciality. iii. Postgraduate training in the field of Neonatology with at least one (1) year post qualification experience in a Neonatology unit not less than 20 basinates. 	Objective Type Test (MCQ) Professional Test=100 marks	 Core courses of MBBS degree program. Core courses of Lower/Higher diploma in Paediatrics Care vs. Cure for Health Management Targets and achievements of Health Policy of the Government, Hospital Administration Future plans of the government for health services to Public.
19.	233/2014	Associate Dental Surgeon (BS-18), Federal Government Polyclinic, Capital Administration and Development Division.	 i. BDS or Equivalent qualification recognized by PMDC. ii. Postgraduate higher diploma in the requisite speciality with three (3) years post qualification Clinical experience in the speciality OR Postgraduate lower diploma with five (5) years post qualification clinical experience in the speciality. 	Objective Type Test (MCQ) Professional Test=100 marks	 Core courses of BDS Degree Program. Contents of Lower/Higher Diploma in Dentistry. Targets and Achievements of Health Policy of the Government, Hospital Administration Future Plans of the Government for Health Services to Public. Health Services Management
20.	234/2014	Pathologist-Cum-Bacteriologist (BS-18), Medical Department of Pakistan Railways, Ministry of Railways.	 i. MBBS or equivalent qualifications. ii. Post graduate higher diploma/ degree, viz., MS/FRCS/ FCPS/ MRCP/ FFA or equivalent in the requisite Speciality and two (2) years post qualification clinical experience OR Post graduate lower diploma in the requisite Speciality and four (4) years post qualification clinical experience. NOTE: MBBS or equivalent qualification, Post graduate Higher Diploma and Post graduate Lower Diploma must be recognised by the Pakistan Medical & Dental Council. 	Objective Type Test (MCQ) Professional Test=100 marks	 Core courses of MBBS Degree Contents of lower/higher diploma in Pathology. Care vs. Cure for Health Management Targets and achievements of Health Policy of the Government, Hospital Administration Future plans of the government for health services to Public.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
21.	236/2014	Pharmacist (BS-17), Federal Government Polyclinic, Capital Administration And Development Division.	B. Pharmacy or equivalent qualification recognized by PMDC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring. Part-II Physical Pharmacy, Clinical Pharmacy, Industrial Pharmacy, Hospital Pharmacy, Pharmaceutical Chemistry, Pharmaceutical Biochemistry, Pharmaceutical Microbiology, Pharmaceutical Quality Control & Management, Physiology & Histology, Application of Computer in Pharmacy.
22.	238/2014	Port Health Officer (BS-18), Port Health Department, Karachi, Directorate of Central Health Establishments, Ministry of National Regulation and Services.	 i. MBBS or equivalent qualification recognized by Pakistan Medical and Dental Council. ii. Postgraduate higher diploma in Public Health with three (3) years post qualification experience. OR Postgraduate lower diploma in Public Health with five (5) years post qualification experience. 	Objective Type Test (MCQ) Professional Test=100 marks	Core courses of MBBS degree program. Core courses of Lower/Higher diploma in Public Health. Health Policy of the Government, Future Plans for Health Services to Public. Health Service Management
23.	239/2014	Charge/ Staff Nurse (Female) (BS-16), Military Hospitals, Defence Division, Ministry of Defence.	 i. Bachelor's Degree in Nursing or equivalent qualification recognized by the Pakistan Nursing Council. ii. Valid registration with Pakistan Nursing Council on or before the closing date. OR ii. Three years Diploma in Nursing. iii. One year Course/ Certificate in Midwifery. iii. Valid registration with Pakistan Nursing Council on or before the closing date. 	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Sentence Structuring Part-II Basic Medical Sciences General Nursing Ward Administration Hospitality of the Patients Care vs. Cure for Health Management Developing Training & Instructional Materials for Nursing Courses.

S.	Case No.	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
No 24.	F.4- 240/2014	Doctor (BS-18), National Highways and Motorways Police, Ministry of Communications.	 i. MBBS or equivalent qualification recognized by Pakistan Medical and Dental Council. ii. Postgraduate higher diploma in the requisite speciality with three (3) years post qualification clinical experience, in the speciality	Objective Type Test (MCQ) Professional Test=100 marks	 Core courses of MBBS degree program. Care vs. Cure for Health Management Targets and achievements of Health Policy of the Government, Hospital Administration Future Plans of the Government for Health Services to Public.
25.	241/2014	Computer Operator (BS-16), National Highways and Motorways Police, Ministry of Communications.	Second Class or Grade 'C' Bachelor's degree in Computer Science.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Sentence Structuring Part-II Software Research and Development, Program logic, Visual Basic, C++, Java, Unix/Red Hat Linux Operating System, Computer Networks and Internet, Computer Graphics and Algorithms Development of basic Algorithms, Analyzing Problem,
26.	242/2014	Assistant Private Secretary, (BS-16), Department of Communication Security, Cabinet Division.	 i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC. ii. Minimum shorthand speed 100 w.p.m. and typing speed of 50 w.p.m. iii. Must be computer literate. iv. Note: A Computer literacy test (Practical) will be conducted comprising use of Microsoft Word and Excel. 	Typing Test with minimum S Shorthand Test with minimum Computer Literacy Test: i Microsoft Word (Typing ii Microsoft Excel (Typing) ii Microsoft Excel (Typing)	Speed of 50 W.P.M um Speed of 100 W.P.M 40 Marks 40 Marks 40 Marks 40 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
27.	244/2014	Admin & Accounts Officer (BS-17), National Archives of Pakistan, Cabinet Division.	Second Class or Grade 'C' M.Com. or M.A. (Economics) OR Second Class or Grade 'C' B.A./ B.Com. with three (3) years post qualification experience in BS-16.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring. Part-II Human Resource Management Recruitment and Selection Basic Accounting and Auditing Civil Servants Act, 1973 and Rules made thereunder Rules of Business, 1973 Secretariat Instructions and Office Procedure. System of Financial Control and Budgeting, 2006 Basic knowledge of Computer/IT. Public Procurement Rules, 2004
28.	245/2014	Trained Graduate Teacher, Mathematics (Male) (BS-16), F.G. English Medium (Public Schools), Directorate of Federal Government Educational Institutions, (Cantts/ Garrisons), Ministry of Defence.	i. Second Class or Grade 'C' Bachelor's Degree with Mathematics. ii. B.Ed.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Biased = 40 marks Part-III Job Oriented = 40 marks	Part-I Vocabulary, Sentence Structuring Part-II (Bachelor's Level) Algebra Mechanics Ordinary Differential Equations Matrices, Determinants and Linear Equations Part-III Education System in Pakistan, Educational Psychology and Student's learning Class Room Management and Discipline, Instructional Planning and Teaching Strategies, Students Evaluation and Examination System, Educational Guidance and Counselling.

Syllabi for Written Examination (Descriptive) for all posts in BS-20

(Case Nos. 243/2014)

PAPER: ENGLISH (100 MARKS)

There will be only one paper of 100 marks for BS-20 & BS-21 posts.

<u>English Essay:</u> Candidates will be required to write an Essay in English from three topics comprising approximately **2000 words**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical treatment of the style of English Essay writing will be examined.

OR

<u>Case Study:</u> Candidates will be given real situation case studies related to advertised posts/organization concerned and will be expected from the candidates to present (i) identification of issues (ii) evaluation of issues (iii) legal or case related theories (iv) evaluation of case facts if required and (v) possible solution of the case or writing judicial order, if the case so requires.

Syllabi for Written Examination (Descriptive) for all posts in BS-18 &19

PAPER-I: ENGLISH (100 MARKS)

(i) <u>English Essay-50 Marks:</u> Candidates will be required to write an Essay in English comprising 1500 words from a set of six given topics. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.

(ii) English (Composition and Précis)-50 Marks:

The examination will test the candidate's abilities to handle Précis Writing, Reading Comprehension, Sentence Structuring, Translation, Grammar and Vocabulary, etc. **Précis Writing (10 marks):** A selected passage with an orientation of generic understanding and enough flexibility for compression shall be given for précising and

Reading Comprehension (10 marks)

suggesting an appropriate title.

A selected passage that is rich in substance but not very technical or disciplinespecific shall be given, followed by five questions, each carrying 2 marks.

Grammar and Vocabulary (10 marks): Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.

Sentence Correction (5 marks): Ten sentences shall be given each having a clear structural flaw in terms of grammar or punctuation. The candidates shall be asked to rewrite them with really needed correction only, without marking unnecessary alterations. No two or more sentence should have exactly the same problem, and 2-3 sentences shall be based on correction of punctuation marks.

Grouping of Words (5 marks): A random list of ten words of moderate standard (neither very easy nor utterly unfamiliar) shall be given, to be grouped by the candidates in pairs of those having similar or opposite meaning, as may be clearly directed in the question.

Pairs of Words (5 marks): Five pairs shall be given of seemingly similar words with different meanings, generally confused in communication, for bringing out the difference in meaning of any five of them by first explaining them in parenthesis and then using them in sentences.

Translation (5 marks): Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated in English.

Sr. No.	Title	Author
1.	English Grammar in Use	Raymond Murphy (Cambridge University
		Press)
2.	Practical English Usage	M. Swan (Oxford University Press)
3.	The Little, Brown Handbook H. Ramsey Flower & Jane Aaron (The Little	
		Brown & Co; Harper Collins)
4.	A University English Grammar	R. Quirk & S. Greenbaum (ELBS; Longmans)
5.	Write Better, Speak Better	Readers Digest Association
6.	Modern English in Action	Henry Christ (D.C. Heath & Co.)

for Nautical Instructor (BS-19)

(Case No. 211/2014)

Part-I: 20 Marks (Management and IT)

Basic concepts of:

- **I.** Public Administration
- II. Human Resource Management
- III. Financial Management
- IV. Information Technology and MS Office

Part-II: 80 Marks (Professional)

- I. Course Contents of Certificate of Competency as Master of Foreign Going Ships.
- II. Pakistan Merchant Shipping Ordinance, 2001
- **III.** Mercantile Shipping (Safety Convention Certificate) Rules 1967.
- **IV.** Port Act 1908 (Relevant Portion)
- V. Lighthouse Act 1927

S.No.	Title	Author	
1.	An Introduction to the Public Administration	E.N.Cladden	
2.	Human Resource Management	H.T.Graham &Roger Bennett	
3.	System of Financial Control and Budgeting, 2006	Published by Finance Division	
4.	Understanding Computers: Today and Tomorrow	Deborah Morley, Charles	
		Parker	
5.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson	
6.	Relevant Rules, Acts, Ordinance and course contents mentioned in Part-II		

for Headmistress (BS-18),

(Case No. 214/2014)

Part-I: 50 Marks

(Human Resource, Financial Management, Quality Management and Information Technology)

I. Human Resource and Financial Management

Definition, Significance and Scope of Human Resource Managment; Organization—Types of Organization, Theory of Organization, Principles of Organization, Organization of the Federal and Provincial Governments, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion, Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Human Behaviour and Organizations Administration.—Elements of Financial Administration, Performance Programmed Budgeting, Capital Budget, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

ISO-9000, ISO-13000, other certifications regarding quality measurement; management, management for Results, Setting Performance Goals and Targets; Job Analysis: Job Description, Job Specification, Performance Evaluation;

III. Information Technology and MS Office

Fundamentals of Computer: CPU, Memory Devices, Types of Computers, Characteristics of Computer and related material; Application Software: Microsoft Word, Microsoft Power Point, Microsoft Excel; Search Engines, Web Design, Email, Internet Surfing, Social Networking (Facebook, Twitter, etc); General Introduction to Virus and Antivirus utilities; Programming Languages

Part-II: (Professional) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissezfaire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

S. No.	Title	Author
1.	Human Resource Management	H.T.Graham &Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer:Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid

for Mechanical Engineer (BS-18)

(Case No. 218/2014)

Part-I: (Mechanical Engineering) 50 Marks

I. Mechanics and Strength of Materials:

Concept of Stress and Strain, bending, torsion, geometric properties of areas, principal stresses, Tensile testing, Stress- Strain curve, Difference between Engineering and True stress & Strain, Shear Stress & Strain, Concept of elastic and plastic deformation, Yield & ultimate Tensile strengths, Elongation, Toughness and Resilience, Ductility and Malleability, Hardness Testing, Brinell and Rock well Hardness test, bending moment,

II. Fluid Mechanics:

Properties and basics of fluid mechanics, loss of head, power transformation by fluids, pumps, turbines. Fluid static's, Fluid dynamics, Types of flow: Turbulent and Laminar, Reynold's number.

III. Thermodynamics and Heat Transfer

Basics of thermodynamics, properties of fluids and steam, steam turbines, power plants. First and second Laws of Thermodynamics, Enthalpy, Entropy, Heat Capacity, Carnot cycle, Gibbs free energy, Equilibrium, PV – diagrams, Refrigeration and Air conditioning, principle and models of heat transfer, Evaporators, Condensers, Heat engines, Engines (2 and 4 strokes).

IV. Manufacturing:

Different manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Wire-drawing, welding, Turning (lathe), Milling, Shaping, Gear cutting, Drilling, Fitting.

Part-II: (Professional) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissezfaire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

S. No.	Title	Author
1.	Fluid mechanics with engineering applications	Finnemore/ Franzini.
2.	Schaum Outline Series; Strength of Materials	Williym A. Nash
3.	Fluid Mechanics	Lewitt
4.	Engineering Mechanics (Statics)	J.L. Merriems.
5.	Testing of Metals	Fazal Karim
6.	Manufacturing Processes for Engineering Materials	Kalpakgjian
7.	Research in Education	JW Best
8.	Integrating Education Technology into Teaching	Roblyer
9.	Curriculum Development	S. M. Shahid
10.	Educational Measurement and Evaluation	S. M. Shahid
11.	Educational Administration	S. M. Shahid

for Accupuncture Specialist (BS-18)

(Case No. 229/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of MBBS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Diploma in Accupuncture.

for 2nd Engineer (Electronics/ Electrical) (BS-18),

(Case No. 230/2014)

Engineering

100 Marks

I. Electricity & Electronics:

Electricity & Magnetism; Electrical potential, Resistance, Laws of resistance, Conductance, Conductivity, Impedance, Ohm law, Resistance in series and in parallel, practical resistors, work, power, Energy, Joule's law of electric field intensity, Gauss's Theorem, Capacitor, Capacitance, Capacitors in parallel and series. Force on a conductor in a magnetic field, electrical and magnetic circuits, leakage flux, Relation between magnetism and electricity, Induced emf, induced current and directions, Faraday's laws of electromagnetic inductions, Lenz's law, dynamically induced emf, Self inductance, mutual inductance and inductance in series/parallel, magnetic hysteresis, Energy stored in magnetic field, Generation of alternating currents and voltages.

II. Electrical Machines:

<u>DC Motors:</u> Shunt, Series and Compound Motors, Speed and Torque Relations. Transformers: Principle, Construction, Voltage transformation ratio, Step-up/stepdown transformers, Copper & Iron Losses, Transformer connections; delta and star.

<u>AC Motors:</u> Induction motor, Synchronous motor, Performance, Efficiency. Single phase and three phase Motors.

<u>Generators:</u> Principle, Construction, Different components of generators. AC Generators, DC Generators.

III. Electronics:

Transistors: types, calculations of voltages and currents in simple transistor circuits.

<u>Amplifier & Oscillators</u>: Working and classification of amplifiers, Class A and Class B Amplifiers, Feedback Amplifiers, Types of Feedback, RC Oscillators.

Integrated Circuits: OP Amps, timers, flip flop, converters, filters.

<u>Telecommunications</u>: EM theory, antennas, antenna gain, free space loss, fading. Modulations (AM, FM, PM, PWM, Delta, FSK, ASK, PSK), Error correction, Demodulation, Detectors, Transmitter, Receivers.

DSP and Controls; filters, stability, Z-transform, Nyquist criteria, S domain, transfer functions.

<u>Introduction to Computing</u>: History and evolution of computers, central processing unit, data storage, input/out put devices, multimedia, operating systems, programming languages, networking, the internet, system analyses and design, management information system, electronic commerce, security and privacy issues, ethical issues and the computing profession,

IV. Power Systems:

Power network analysis, Polyphase circuits, Transients, Transmission Lines, Losses.

V. Costing, Accounting and Budgeting:

Net present value, Net future value, cash flows, auditing, income statement, balance sheet, taxation, financial risk management, cost analysis.

VI. Project Management:

Time lines, milestones, resources allocation, dependency, Gant Charts,

VII. Inventory Management:

FIFO models, LIFI models, Identification Schemes, Inventory management systems.

VIII. Quality Management Systems:

QA modles. Deming, Juran Crosby, Quality circles, management responsibility, quality planning, purchasing, design process and design validation, quality audit, corrective and preventive measures.

S.No.	Title	Author
1.	Electrical Technology	B.L. Tharaja
2.	Electronic Devices and Circuits.	Bogart
3.	DC Machines	P.C. Sen
4.	Semiconductors	Manzar Saeed
5.	Modern Digital and Analog	B.P.Lathi
	Communication	
6.	Computers, tools for an Information age,	H.L. Captron, Addison Wesley
7.	Handbook of Engineering Management	Dennis Lock.
8.	Total Quality Management	Dale H. Besterfield, Carol
		Besterfield-Michna, Glen H.
		Besterfield, Mary Gesterfield-Sacre

for Associate Professor, Islamic Studies (Female) (BS-19), (Case No. 231/2014)

Part-I: (Islamic Studies) 50 Marks

I. Islam: the Code of Life

- Salient features of Islamic;
- Social System
- Political System
- Economic System
- Judicial System
- administrative System
- Responsibilities of civil servants

II. Study of Seerah

Need and importance of the study of Seerah Prophet Mohummad (PBAH) as;

- The Role Model
- Merciful for the universe.
- Preacher
- Diplomat
- Teacher and Educationalist
- Revolutionary Leader

III. Islamic Civilization and Culture:

- Meanings and the vital elements
- The role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - Tauheed
 - Spiritualism
 - o Dignity of Man
 - o Equality
 - o Social Justice
 - Moral values
 - o Tolerance
 - o Rule of Law

IV. Islam and World

- Impact of Islamic Civilization on the West and vice-versa.
- Muslim World and the Contemporary Challenges
- · Interaction between East and West.
- The role of Islam in the modern world.

Part-II: (Professional) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissezfaire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

S. No.	Title	Author
1.	Islam: its meaning and Message	Khurshid Ahmad
2.	Islam: The Misunderstood Religion	Muhammad Qutub
3.	Towards Understanding Islam	Abul Aala Moudoodi
4.	Ideals and Realities of Islam	Hussain Nasr,
5.	A brief Survey of Muslim Science and Culture	Muhammad Abdur –Rahman
6.	Quranic Sciences	Afzalur Rahman
7.	Research in Education	JW Best
8.	Integrating Education Technology into Teaching	Roblyer
9.	Curriculum Development	S.M. Shahid
10.	Educational Measurement and Evaluation	S.M. Shahid
11.	Educational Administration	S.M. Shahid

for Neonatologist (BS-18)

(Case No. 232/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of MBBS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Lower Diploma in Paediatrics.

for Associate Dental Surgeon (BS-18)

(Case No. 233/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of BDS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Lower Diploma in Dental Surgery.

for Pathologist-Cum-Bacteriologist (BS-18), (Case No. 234/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of MBBS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Lower Diploma in Pathology.

for Port Health Officer (BS-18),

(Case No. 238/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of MBBS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Lower Diploma in Public Health.

for Doctor (BS-18), (Case No. 240/2014)

Part-I: (Qualification Based) 50 Marks

Core courses of MBBS Degree

Part-II: (Professional) 50 Marks

Core courses of Post Graduate Lower Diploma in Medicine.