

**ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ, ਪੰਜਾਬ**  
**S.S.S. BOARD, PUNJAB**  
**ਵਣ ਕੰਪਲੈਕਸ, ਸੈਕਟਰ-68 ਮੋਹਾਲੀ**

**ਜਨਤਕ ਨੋਟਿਸ**

ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ ਪੰਜਾਬ ਵੱਲੋਂ ਇਸ਼ਤਿਹਾਰ ਨੰਬਰ 07 ਆਫ 15 ਰਾਹੀਂ ਪ੍ਰਕਾਸ਼ਿਤ ਕੰਪਿਊਟਰ ਅਪਰੇਟਰ, ਵੀਡੀਓ ਕਾਨਫਰੰਸ ਓਪਰੇਟਰ, ਕੰਪਿਊਟਰ ਟੀਚਰ ਦੀਆਂ ਅਸਾਮੀਆਂ ਅਤੇ ਇਸ਼ਤਿਹਾਰ ਨੰਬਰ 05 ਆਫ 2016 ਰਾਹੀਂ ਪ੍ਰਕਾਸ਼ਿਤ ਡਰਾਇਵਰ ਦੀਆਂ ਅਸਾਮੀਆਂ ਅਤੇ ਇਸ਼ਤਿਹਾਰ ਨੰਬਰ 07 ਆਫ 2016 ਰਾਹੀਂ ਪ੍ਰਕਾਸ਼ਿਤ ਮੱਛੀ ਪਾਲਣ ਅਫਸਰ ਦੀਆਂ ਅਸਾਮੀਆਂ ਅਤੇ ਇਸ਼ਤਿਹਾਰ ਨੰਬਰ 01 ਆਫ 2017 ਰਾਹੀਂ ਪ੍ਰਕਾਸ਼ਿਤ ਚੋਣ ਕਾਨੂੰਗੋ ਦੀਆਂ ਅਸਾਮੀਆਂ ਦੀ ਭਰਤੀ ਲਈ ਲਿਖਤੀ ਟੈਸਟ ਹੇਠ ਦਰਸਾਈਆ ਗਈਆਂ ਮਿਤੀਆਂ ਨੂੰ ਲਿਆ ਜਾਵੇਗਾ :-

| ਲੜੀ ਨੰ: | ਅਸਾਮੀ ਦਾ ਨਾਮ         | ਮਿਤੀ       | ਸਮਾਂ                  |
|---------|----------------------|------------|-----------------------|
| 1       | ਚੋਣ ਕਾਨੂੰਗੋ          | 16/09/2018 | 10:00 am to 11:30 am  |
| 2       | ਡਰਾਇਵਰ               | 16/09/2018 | 2.00 pm to 3:30 pm    |
| 3       | ਮੱਛੀ ਪਾਲਣ ਅਫਸਰ       | 29/09/2018 | 10:00 am to 11:30 am  |
| 4       | ਕੰਪਿਊਟਰ ਅਪਰੇਟਰ       | 30/09/2018 | 9:00 am to 10:30 am   |
| 5       | ਵੀਡੀਓ ਕਾਨਫਰੰਸ ਓਪਰੇਟਰ | 30/09/2018 | 12:00 noon to 1:30 pm |
| 6       | ਕੰਪਿਊਟਰ ਟੀਚਰ         | 30/09/2018 | 3:00 pm to 4:30 pm    |

3. ਉਪਰੋਕਤ ਅਸਾਮੀਆਂ ਵਿੱਚੋਂ ਚੋਣ ਕਾਨੂੰਗੋ ਦੀ ਅਸਾਮੀਆਂ ਲਈ ਸਲੇਬਸ ਪਹਿਲਾਂ ਹੀ ਬੋਰਡ ਦੀ ਵੈੱਬਸਾਈਟ ਤੇ ਉਪਲੱਬਧ ਹੈ। ਡਰਾਇਵਰ ਦੀਆਂ ਅਸਾਮੀਆਂ ਲਈ ਇਸ਼ਤਿਹਾਰ ਵਿੱਚ ਦਰਸਾਈ ਗਈ ਚੋਣ ਵਿਧੀ ਅਨੁਸਾਰ ਲਿਖਤੀ ਟੈਸਟ ਲਿਆ ਜਾਵੇਗਾ। ਕੰਪਿਊਟਰ ਅਪਰੇਟਰ, ਵੀਡੀਓ ਕਾਨਫਰੰਸ ਓਪਰੇਟਰ, ਕੰਪਿਊਟਰ ਟੀਚਰ ਦੀਆਂ ਅਸਾਮੀਆਂ ਲਈ ਸਲੇਬਸ ਕ੍ਰਮਵਾਰ Annexure A, Annexure B ਅਤੇ Annexure C ਤੇ ਨੱਥੀ ਕੀਤਾ ਜਾਂਦਾ ਹੈ।

4. ਉਪਰੋਕਤ ਪੇਪਰਾਂ ਸਬੰਧੀ ਸਥਾਨ ਆਦਿ ਦੀ ਸੂਚਨਾ ਐਡਮਿਟ ਕਾਰਡ ਉੱਤੇ ਉਮੀਦਵਾਰਾਂ ਨੂੰ ਮੁਹੱਈਆ ਕਰਵਾਈ ਜਾਵੇਗੀ। ਐਡਮਿਟ ਕਾਰਡ ਬਾਅਦ ਵਿੱਚ ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ ਦੀ ਵੈੱਬਸਾਈਟ ਤੇ ਅਪਲੋਡ ਕੀਤੇ ਜਾਣਗੇ। ਉਮੀਦਵਾਰ ਇਸ ਸਬੰਧੀ ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ ਦੀ ਵੈੱਬਸਾਈਟ ਨੂੰ ਸਮੇਂ ਸਮੇਂ ਤੇ ਚੈੱਕ ਕਰਦੇ ਰਹਿਣ।

-ਸਹੀ-

ਸਕੱਤਰ

ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ, ਪੰਜਾਬ

## **Syllabus for Computer Operator**

### Introduction to Computers

Evolution and Generation of Computers, Types of Computer , Organization of Computer system, Hardware, Software, Peripheral Devices, Algorithm, Flowchart and Number System.

### Operating System

Introduction to Operating Systems, Main Functions and characteristics of Operating Systems, Types of Operating Systems, Virtual Memory , Cache Memory, Windows and Unix Operating system

### Database Management System

Data organization, File Management System, Database Concepts, Relational Data Model and Basic Concept of Database, DDL, DML. Popular Database Management System- with SQL.

### Office Tools

Word Processing Tools, Electronic spreadsheets, Electronic presentation tools. Microsoft Office (Word, Excel, Power Point), Open Office

### Computer Networks

Types of networks, Network topology, Transmission Modes, security issues, LAN, MAN, WAN, Repeaters, Bridges, Routers, Gateways, TCP/IP ,FTP and Telnet

### Internet

Working with internet, uses of internet, Intranet and Extranet, Search Engines, e-mail, e-commerce, e-banking, Website and domain names, http, https.

### Web Technologies

Introduction to Website, Layouts & Composition, Static and Dynamic Website, Client Side & Server Side Scripting, Web Standards. Web Structures & Templates: Website Basic Structures, Web designing tools: Adobe Dreamweaver, Flash, Introduction to HTML, Basic Structure of HTML, Head Section & Meta Tags. HTML Basic Tags: Heading Tags, Structure Elements, Frame, Forms: Input Element & its various Types, Uploading Files & Hidden Fields, Creating Submit & Reset Buttons, Creating User Login & Signup Forms, Creating Register Forms using Form Elements.

**Syllabus for Video Conferencing Operator Advertised through Advt. No. 07 of 2015.**

Introduction to Computers

Evolution and Generation of Computers, Types of Computer, Organization of Computer system, Hardware, Software, Peripheral Devices, Backup devices like UPS, Multimedia Projectors and Video Conferencing peripherals

Operating System

Introduction to Operating Systems, Main Functions and characteristics of Operating Systems, Types of Operating Systems, Windows and Unix Operating system, Introduction to the booting process, BIOS settings and their modification. Introduction to various types of memories and their features, Basic Hardware and software issues and their solutions, Formatting and Loading O.S and Application software and Antivirus.

Computer Networks & Internet

Types of networks, Network topology, Transmission Modes, security issues, LAN, MAN, WAN, Repeaters, Bridges, Routers, Gateways, TCP/IP ,FTP and Telnet, Internet, Intranet and Extranet, Search Engines, e-mail, Website and domain names, http, https, Configure Outlook, mail service in mobile phones. Using tools like Skype, Google+ etc, Introduction to video chatting tools, VOIP and Social Networking concepts., Introduction to Internet Security, Threats and attacks, Malicious Software types, Internet security products and their advantages. Bluetooth configuration, wired and wireless Network Configuration, Standard data transfer protocols used to hold video conferencing

Introduction to Multimedia

Audio fundamentals and representations, Digitization of sound, frequency a audio file format., Image fundamentals and representations, 2D Graphics, Image Compression and File Formats GIF, JPEG, JPEG 2000, PNG, TIFF. Video and Animation. Video Basics , How Video Works, Broadcast Video Standards, Analog video, Digital video, Video Recording and Tape formats, Shooting and Editing Video (Video Compression and File Formats. Video compression based on motion)

**Syllabus for Computer Teacher Advertised through Advt. No. 07 of 2015.**

Introduction to Computers

Evolution and Generation of Computers, Types of Computer, Organization of Computer system, Hardware, Software, Peripheral Devices, Algorithm, Flowchart , Word, excel, Power point, Access etc.

Digital circuits and logic design

Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point)., Flip flop: Counters, Design of asynchronous and synchronous, up down and programmable counters, shift registers, various types and their applications. Detection and correction codes

Computer Organization and Architecture

Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Programming languages

C language

Character set, Identifiers & Keywords, Data Types, constants, set, constants, variables, expressions, statement, and symbolic constants, Operators library functions, formatted and unformatted i/o statements, Control statements, Functions, Storage Classes, Array, Strings, Structure and Union , Pointers and File Handling

C++ Language

Difference between C, C++. Features of C++, I/O statements in C++, Manipulators, Classes and Objects, Access Specifiers, Function Overloading, Inline Functions, Friend Functions and Friend Class. Constructors & Destructors: Types of Constructors, Inheritance, Types of Inheritance, Ambiguity in Inheritance, Polymorphism: Virtual Functions, Pure virtual Functions, Operator Overloading. Pointers, Array of pointers, Dynamic memory allocation, File handling, Templates and Exception Handling.

Java

Features of JAVA, Data Types, Variables, Arrays, Operators and Control Structures Statements. Classes and Inheritance: Class Fundamentals, Declaring objects, introducing methods, constructors, this keyword, Overloading constructors, Recursion, Nested and Inner classes, Creating Multilevel hierarchy, Method Overriding, Abstract Classes. Packages and Interface: Packages, Access Protection, Importing Packages, Interfaces, Defining, Implementing, Applying Interfaces, Extending Interfaces, Exception Handling: Fundamentals, Exception Types, uncaught exceptions, try and catch, Multithreaded Programming: The Java Thread Model, Thread Priorities, Synchronization, Interthread communication, Suspending Resuming and Stopping Threads. Applets: Applet basics, Applet Architecture, Applet: Display, Parameter Passing. Event Handling: The Delegation Event Model, Event Classes, Event Listener Interfaces. AWT: Window Fundamentals, Working with Frame Windows, Graphics, Color and Fonts., Servlets: Life Cycle of a Servlet, The Servlet API, Reading Servlet Parameters, Handling HTTP Requests and Responses, Cookies & Session Tracking, JDBC: Database Programming, Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data.

Data Structures

Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

### Algorithms

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph search, minimum spanning trees, shortest paths.

### Operating System

Processes, threads, interprocess communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

### Database Management System

ER-model. Relational model: relational algebra, tuple calculus, Three level ANSI-SPARC Architecture Schemas, Mapping, instances and Database Independence, Keys, Integrity Constraints, SQL, Data Definition Language (DDL), Data Manipulation Language (DML), Data Control Language (DCL) statements, Views, Sub-queries, Access Rights, Indexes, Purpose of Normalization, 1NF, 2NF, 3NF, BCNF. Integrity constraints, **Database Recovery of database**. Transactions and concurrency control.

### Computer Networks

Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls, Domain Name System, Electronic Mail, Worldwide web (WWW)

### Discrete Mathematics

Propositional and first order logic. Sets, relations, functions, partial orders and lattices. Groups. Graphs: connectivity, matching, coloring. Combinatorics, counting, recurrence relations, generating functions.

### Software Engineering

Principles of Software Engineering, Software Development Life Cycle, Software Project Management: Management Activities, Project Planning, Project Scheduling, Risk Management. Software Design: Principles, Methodologies, Design specifications, Verification and validation, Software Product metrics- Object-oriented design metrics, operation-oriented metrics and interface design metrics-metrics for source coding, metrics for testing, metrics for maintenance. Software Testing Fundamentals, broad categories of testing –General principles of testing ,Major Software Testing Techniques- White-box testing, basis path testing: flow graph notation, cyclomatic complexity; Control structure testing: condition testing, data-flow testing, loop testing ; Black Box testing : Graph based testing methods-BVA