

**FURTHER DETAILS REGARDING MAIN TOPICS OF  
PROGRAMME No. 10/2018 (Item No.1)**

**JUNIOR INSTRUCTOR (TURNER)**

**INDUSTRIAL TRAINING DEPARTMENT  
(Category No.551/2017)**

**Part I - General Knowledge and Current Affairs**

**Salient Features of Indian Constitution**

Salient features of the Constitution - Preamble- Its significance and its place in the interpretation of the Constitution.

Fundamental Rights - Directive Principles of State Policy - Relation between Fundamental Rights and Directive Principles - Fundamental Duties.

Executive - Legislature - Judiciary - Both at Union and State Level. - Other Constitutional Authorities.

Centre-State Relations - Legislative - Administrative and Financial.

Services under the Union and the States.

Emergency Provisions.

Amendment Provisions of the Constitution.

**Social Welfare Legislations and Programmes**

Social Service Legislations like Right to Information Act, Prevention of atrocities against

Women & Children, Food Security Act, Environmental Acts etc. and Social Welfare Programmes like Employment Guarantee Programme, Organ and Blood Donation etc.

**RENAISSANCE IN KERALA**

**Towards A New Society**

Introduction to English education - various missionary organisations and their functioning- founding of educational institutions, factories, printing press etc.

**Efforts To Reform The Society**

**(A) Socio-Religious reform Movements**

SNDP Yogam, Nair Service Society, Yogakshema Sabha, Sadhu Jana Paripalana Sangham, Vaala Samudaya Parishkarani Sabha, Samathwa Samajam, Islam Dharma Paripalana Sangham, Prathyaksha Raksha Daiva Sabha, Sahodara Prasthanam etc.

**(B) Struggles and Social Revolts**

Upper cloth revolts. Channar agitation, Vaikom Sathyagraha, Guruvayoor Sathyagraha, Paliyam Sathyagraha. Kuttamkulam Sathyagraha, Temple Entry Proclamation, Temple Entry Act .Malyalee Memorial, Ezhava Memorial etc.

Malabar riots, Civil Disobedience Movement, Abstention movement etc.

### **Role Of Press In Renaissance**

*Malayalee, Swadeshabhimani, Vivekodayam, Mithavadi, Swaraj, Malayala Manorama, Bhashaposhini, Mathnubhoomi, Kerala Kaumudi, Samadarsi, Kesari, Al-Ameen, Prabhatham, Yukthivadi, etc*

### **Awakening Through Literature**

Novel, Drama, Poetry, *Purogamana Sahithya Prasthanam, Nataka Prashtanam, Library movement etc*

### **Women And Social Change**

Parvathi Nenmenimangalam, Arya Pallam, A V Kuttimalu Amma, Lalitha Prabhu. Akkamma Cheriyan, Anna Chandi, Lalithambika Antharjanam and others

### **Leaders Of Renaissance**

Thycaud Ayya Vaikundar, Sree Narayana Guru, Ayyan Kali. Chattampi Swamikal, Brahmananda Sivayogi, Vagbhadananda, Poikayil Yohannan (Kumara Guru) Dr Palpu, Palakkunnath Abraham Malpan, Mampuram Thangal, Sahodaran Ayyappan, Pandit K P Karuppan, Pampadi John Joseph, Mannathu Padmanabhan, V T Bhattathirippad, Vakkom Abdul Khadar Maulavi, Makthi Thangal, Blessed Elias Kuriakose Chaavra, Barrister G P Pillai, TK Madhavan, Moorkoth Kumaran, C. Krishnan, K P Kesava Menon, Dr. Ayyathan Gopalan, C V Kunjuraman, Kuroor Neelakantan Namboothiripad,

Velukkutty Arayan, K P Vellon, P K Chathan Master, K Kelappan, P. Krishna Pillai, A K Gopalan, T R Krishnaswami Iyer, C Kesavan. Swami Ananda Theerthan, M C Joseph, Kuttippuzha Krishnapillai and others

### **Literary Figures**

Kodungallur Kunhikkuttan Thampuran, KeralaVarma Valiyakoyi Thampuran, Kandathil Varghese Mappila. Kumaran Asan, Vallathol Narayana Menon, Ulloor S Parameswara Iyer, G Sankara Kurup, Changampuzha Krishna Pillai, Chandu Menon, Vaikom Muhammad Basheer. Kesav Dev, Thakazhi Sivasankara Pillai, Ponkunnam Varky, S K Pottakkad and others

## **GENERAL KNOWLEDGE AND CURRENT AFFAIRS**

General Knowledge and Current Affairs

### **Part II :**

Road safety, Types of fire extinguishers, Disposal of waste material

Elements of a file, Benchvice, Trysquare, Steel rule, Measuring devices – Inside & outside calipers, Types of calipers, Graduations and reading of vernier calipers, Markingmedia, Jenny calipers, Dividers, Types of marking punches, Angle plate, Special files, Types of vices, Chisel, Hammer, Angles of chisel, Work-holding devices, Hand taps and wrenches, Die and die stock, Counter sinking, Counter boring and spot facing, Vernier bevel protractor, Reading of universal bevel protractor, Vernier depth gauge.

Centre lathe and its parts, Lathe operation – Plain turning, Head stock, Specification of a centre lathe, Constructional features of a compound slide, Lathe accessories – work-holding devices : 3 Jaw chuck, Lathe accessories – work-holding devices : 4 Jaw chuck, Different tool material, Cutting tools – tool angles and their functions, Types of cutting tools, Lathe operations – Centre drilling, Lathe operation – Cutting speed and feed, Lathe operation – Different types of shoulders, Lathe bed, Cutting fluids, Lathe operation – boring tools & boring, Grinding wheels, Defects developed on the surface of the wheel by grinding, Lathe operation – reamers & reaming, Lathe parts – tails stock, The carriage, Telescopic gauge, Lathe accessories – Lathe centres, Types of grooves (Undercuts), Norton gearbox, Tumbler gear mechanism, Lathe parts – Main spindle, Preparing work for in-between centre turning, Kinds of lathe cutting tools, Driving plate and face plate, The Indian standard system of limits & fits –Terminology, Outside micrometers, Graduations of metric outside micrometer, Reading dimensions with outside micrometers.

Standard tapers and their uses, Methods of turning taper on lathe, Calculation of the compound slide swivel angle, Taper turning attachment, Combination set, Measuring angles with vernier bevel protractor, Measurement of angles, Reading of universal bevel protractor, Boring and reaming, Internal radius, chamfer and trepanning tools.

Vernier height gauge, Vernier height gauge, Eccentric turning

Screw threads – Types of V threads and their uses, Hand chasers and their uses, Methods of producing threads, Threads : chasing of threads, British thread chasing dial, Metric thread chasing dial, Pipe thread cutting on the lathe, Screw thread measurement (gauges), Thread measurement (effective diameter), Thread measurement (minor diameter), Screw thread measurement (flank angle and form), Types of threads (square and trapezoidal threads), The chip breakers and their uses, ACME thread, Square thread, Buttress threads, Soldering, Gases use in gas welding, Types of oxy-acetylene flames, Acetylene gas generation, Method of cleaning before welding, Common metals, alloy and their melting points, Welding (fusion, Non-fusion and pressure), Arc-welding tools and accessories, Arc-welding machines, Types of ‘T’, lap and corner joints, Welding symbols, Braze welding method, Melting points of common metals, Methods of brazing carbide tips

Properties of cutting tool materials, Cutting tools angles and their functions, Types and specifications of carbide tools, Tool life.

Form turning, Radius and fillet gauges, The effective rake and clearance angles for tools set above or below the centre height, Jigs and fixtures, Types of drill jigs, The chip breakers and their uses.

Determining taper angle using sine bar and slip gauges, Measuring angle of tapered (external) components, Determining diameters of tapered components, Soldering and brazing, Carbide throw-away tip tools.

Lubricants and lubrication, Methods of applying lubricant, Classification of lubricants, Lubricating machines, Dial test indicator, Grinding wheels, Defects in grinding wheel, Preventive maintenance.

Eccentric turning, Steady rests, Simple and compound gear trains, Attachments used in centre lathe, Copying attachment, Toolmaker's button, Inside micrometer – metric, Three-point internal micrometer, Multi-start threads and methods of producing, Multi-start, right hand and left hand threads, Helix angle and its effects on threading tool clearance angles

Balancing work on face plate, Plain bearings, Anti-friction bearing, Split bearing, Bearing materials (Plain bearing), Heat treatment of plain carbon steel, Hardening of carbon steel, Annealing of steel, Normalizing of steel, Induction hardening, Carburising of steel, Nitriding, Taper threading, Capstan lathe and its parts, Turret heads, Roller box turning tools, Turret lathes, Dead stops and trips on capstan and turret lathes, Collets used on capstan and turret lathes, Type of tool-holders in capstan and turret, Knee turning – holder and combination tool – holder, Methods of producing external threads on capstan lathes, Accessories for capstan and turret lathe, Methods of producing internal threads on capstan/turret lathes, Two-point self-centering bore dial gauge, Machining symbols

Difference between CNC and conventional lathes, Fundamentals of CNC machines, Basic structure of CNC lathe, Preparation of part programming, Types of offsets, Straight turning, Canned cycles, Different type Control System – Sinumeric, Part programming

Different types of drilling machines and their uses, Operation other than drilling performed on drilling machines, Adhesive bonding, Wrenches, Spanners and their uses, Standard and special screwdrivers and their uses, Bolts and studs, Machine screws, Thumb screws, Self-tapping screws.

***NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.***