



ईपीएफओ, मुख्य कार्यालय
श्रम एवं रोज़गार मंत्रालय, भारत सरकार
भविष्य निधि भवन, 14, भीकाजी कामा प्लेस, नई दिल्ली 110066



EPFO, HEAD OFFICE
MINISTRY OF LABOUR & EMPLOYMENT, GOVERNMENT OF INDIA
BHAVISHYA NIDHI BHAWAN, 14, BHIKAJI CAMA PLACE, NEW DELHI 110066
www.epfindia.gov.in

File No. A-34012/5/2022-EXAM-149

Date: 15.11.2022

To,

All Zonal Additional CPFC (HQ)/ Director (PDNASS)
Additional CPFC (ASD)/Zones/ ZTIs

Subject: - Conduct of Examination of DPAs for the post of Programmer - Regarding.

Madam/Sir,

In view of the recommendations of the Cadre Restructuring 2016, a Competitive Examination is proposed to be conducted to test the Data Processing Assistants for their suitability for the post of Programmer. The Date of the examination shall be intimated shortly. The tentative list of centers with details of the candidate proposed for each Center is enclosed as **Annexure I**. All the Officers In Charge of the concerned offices where these DPAs are posted are requested to ensure that the details of candidates are correct and if any amendments required, the same should be forwarded urgently to rpfc.exam@epfindia.gov.in with details of corrections to be made through the Zonal Offices.

2. The proposed syllabus and examination pattern is enclosed as **Annexure II** which may be brought to the notice of all the DPAs posted in respective offices. The examination shall be competitive in nature as only around 70 posts are initially being considered for being filled up through DPAs based on their performance in the said examination. The merit listed candidates with minimum marks of 40% and above shall be considered deemed fit for the post of Programmer subject to their satisfying the required qualifications and other conditions as per the RR. The number of posts to be filled up may however be amended as per decision of Competent Authority.

3. It may be noted that merely qualifying in the examination or being merit listed does not bestow any right to any candidate for the post of Programmer as the same is subject to the approval of the Competent Authority as per rules and regulations in this regard.

4. The contents of this letter may please be brought to the notice of all concerned immediately with the direction that they are required to appear for the said examination and a copy of this letter may also please be displayed on the Notice Board.

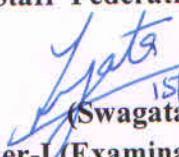
Yours faithfully,

Encl: As above


(Uma Mandal)

Additional Central P.F. Commissioner (HR)

1. P.S. to CPFC,
2. P.S to FA & CAO
3. P.S. to ACC (HQ-HR)
4. RPFC-I (HRM-X)/RPFC-I HRD, Head Office,
5. RPFC ASD /All RPFC (OIC) of offices where DPAs are posted.
6. AD(OL), Head Office for translation in Hindi
7. Secretary General AIEPFSF & Secretary General AIEPF SC/ST Staff Federation


(Swagata Rai)
Regional P.F. Commissioner-I (Examination)

LIST OF CANDIDATES CENTER WISE :-

CENTER 1 – DELHI – 71

MAS TER SL NO	Employee ID	Employee Name	Present Office	State SN	State
1	AP221273089221099	ANIL SUMAN	DELHI NORTH	1	DELHI
2	SS220673089170498	SUNITA	DELHI NORTH	2	
3	AO240274089110898	ANUJ KUMAR SHARMA	DELHI (CENTRAL)	3	
4	AV281276098200398	AAKANKSHA RANJAN	DELHI SOUTH	4	
5	VH010379112041199	VINAY KUMAR	DELHI EAST	5	
6	VK020774098151199	VINOD KUMAR	DELHI NORTH	6	
7	HS010778048151099	HIMANSHU ARON	DEHRADUN	1	UTTARAKHAND
8	SB050868049090398	SARWAN KUMAR	HALDWANI	2	
9	AM151074081160398	ANIL KUMAR	DEHRADUN	3	
10	PS121173030201099	PANKAJ SARPAL	JALANDHAR	1	PUNJAB
11	RR011171027241195	RITU SEHGAL	CHANDIGARH	2	
12	KJ110769027241293	KIRAN BALA	CHANDIGARH	3	
13	HK050987027270808	HIMANSHU	AMRITSAR	4	
14	AS220967027060192	ANJANA GUPTA	CHANDIGARH	5	
15	KS020974051151099	KAMALJIT SINGH	BHATINDA	6	
16	MA200475086160893	MUNISH KUMAR	LUDHIANA	7	
17	SB231175086221099	SHIVENDRA VERMA	LUDHIANA	8	
18	SS030976016141099	SANJAY	ROHTAK	1	HARYANA
19	AJ070775016031199	ANIL ARYA	KARNAL	2	
20	AK100978098300798	ANIL KUMAR YADAV	FARIDABAD	3	
21	AH080175098060798	AJAY KUMAR	FARIDABAD	4	
22	HR021076118281099	HARI CHAND	FARIDABAD	5	
23	SC010972118151199	SINGH RAJ BAISLA	FARIDABAD	6	
24	SU120573124301098	SISHPAL SINGH RAWAT	GURGAON (WEST)	7	
25	SD230976043211099	SANTOSH KUMAR SRIVASTAVA	BAREILLY	1	UTTAR PRADESH
26	MV040472043271099	MUKESH KUMAR	BAREILLY	2	
27	JP010376040221099	JITESH PRIYARANJAN	GORAKHPUR	3	
28	DS220172040251099	DHARMENDRA KUMAR	GORAKHPUR	4	

29	AJ291172013130798	ANAND MOHAN PRASAD	VARANASI	5	
30	PS020175013051199	PANKAJ KUMAR SINHA	VARANASI	6	
31	AA310376057011199	ANAND RANJAN KUMAR	NOIDA	7	
32	RA051073057221099	RANDHIR KUMAR	NOIDA	8	
33	AR191274087261099	AJAY KUMAR	LUCKNOW	9	
34	RM301274087291099	RAHUL NIGAM	LUCKNOW	10	
35	SS011170088191199	SATISH KUMAR	MEERUT	11	
36	KM301274088011199	KAMESHWAR NATH ARYA	MEERUT	12	
37	BR090976088011199	BAIDHNATH ANAND	MEERUT	13	
38	RB091176104261099	RAJESH PRASAD	ALLAHABAD	14	
39	VK120475104221099	VIKAS SHARMA	ALLAHABAD	15	
40	PN200771105281098	PANKAJ KUMAR AGRAWAL	AGRA	16	
41	PP170586094210807	POOJA DUBEY	NOIDA	17	
42	AS041074094201099	ATUL KRSRIVASTAVA	KANPUR	18	
43	PR041173094181099	PANKAJ CHAUHAN	KANPUR	19	
44	VS240869094301098	VINAY KUMAR SINGH	KANPUR	20	
45	RT101175068151099	RAJAN T	JAMMU	1	JAMMU & KASHMIR
46	SB200468001300595	S MINI	JAMMU	2	
47	PG240668024121199	PRAMOD LOKHANDE	JAMMU	3	
48	MS010371113030798	MAMTA GAIND	NATRSS	1	PDNASS & ZTI (NZ)
49	MA301279113221099	MANINDER SINGH BHATIA	NATRSS	2	
50	PM210775124221099	PRINCE PAUL	ZTI-NZ	3	
51	SD200175042201099	SANJAY KUMAR	HEAD OFFICE	1	HEAD OFFICE
52	SK150575042261099	SHYAM KUMAR KASHYAP	HEAD OFFICE	2	
53	RA131079048210207	RESHMA TIRKEY	HEAD OFFICE	3	
54	AT010674081201099	AMIT CHAUHAN TUHI RAM	HEAD OFFICE	4	
55	JC050278118221099	JAGMOHAN PAL	HEAD OFFICE	5	
56	AV071168124200398	ANITA KAPOOR	HEAD OFFICE	6	
57	BG141270124010499	BRK DURGA	HEAD OFFICE	7	
58	BM190276124141098	BENNY THOMAS	HEAD OFFICE	8	
59	PM050866124021198	PADMAVATHY	HEAD OFFICE	9	
60	HL061174124251099	HEMANDRA KUMAR	HEAD OFFICE	10	

61	JG030573124281099	JUGAL SOLANKI	HEAD OFFICE	11	
62	KM100772124301099	KAMAL KISHORE	HEAD OFFICE	12	
63	MR090376124281099	MOHIT PRAKASH	HEAD OFFICE	13	
64	PR030374124020798	PRINCE	HEAD OFFICE	14	
65	RS120972124130798	RAJ KUMAR PRASAD	HEAD OFFICE	15	
66	RS240972124231096	RAJEEV GUPTA	HEAD OFFICE	16	
67	SR180577124201099	SANDHYA CHADHA	HEAD OFFICE	17	
68	VS281073124061198	VANDANA CHHABRA	HEAD OFFICE	18	
69	VR130777124011299	VINAY SAINI	HEAD OFFICE	19	
70	YN040973124301198	YOGESH KUMAR	HEAD OFFICE	20	
71	RR010786124180107	RAVINDER	HEAD OFFICE	21	
72	SK021073078151099	SANJIV BHAGIA	HEAD OFFICE	22	

CENTER 2 – CHENNAI – 42

MAS TER SL NO	EmployeeID	Employee Name	Present Office	State SN	State
73	RA050468005160392	RAVIKRISHNAN R	COIMBATORE	1	TAMIL NADU
74	PD080369037310300	P REVATHI	PUDUCHERRY	2	
75	MM220678037290698	MALATI SURESHKUMAR	PUDUCHERRY	3	
76	SP300571038161198	SESHAGIRI RAO PV	TAMBARAM	4	
77	SG271174038111295	SUDARSAN N	TAMBARAM	5	
78	SS211071022300798	S THIRUMALAI MARAN	COIMBATORE	6	
79	RM210272053130598	RAMESH SANKAR R	TIRUNELVELI	7	
80	NP150773053021198	NATARAJAN S	TIRUNELVELI	8	
81	SS140573047040796	SANKARANARAYANAN S	CHENNAI (SOUTH)	9	
82	SR170772047021198	SEKAR K	CHENNAI (SOUTH)	10	
83	PP271274014111199	P N VIJAYALAKSHMI	CHENNAI (NORTH)	11	
84	SV150168058010895	SUBRAMANIAN MMV	AMBATTUR	12	
85	SN061172058130798	SUDHA NM	AMBATTUR	13	
86	SS100773059111099	SP THIRUMURUGAKIRUBANA NDAN	NAGERCOIL	14	
87	PP250472059010299	P B SIVAPRAKASH	NAGERCOIL	15	
88	AN140465084030197	ADHAKSHINAMOORTHY	VELLORE	16	
89	SA250770084300697	SARUN	VELLORE	17	
90	TP220369085021198	THIRUMURUGAN C	MADURAI	18	
91	SR170472085170898	SARAVANAKUMAR S	MADURAI	19	

92	SS020669076101198	S SAI SUBRAMANIAM	TRICHY	20	
93	SS120563076240797	S R CHANDRASEKARAN	TRICHY	21	
94	AP140672114141298	A KARUNANITHI	SALEM	22	
95	VN230971114040396	V MURALI	SALEM	23	
96	AV050369047130197	ANAND P L	CHENNAI (NORTH)	24	
97	JS050570025301198	JAYASREE SREEKUMAR	KOCHI	1	KERALA & LKSHDW EEP
98	BB230373009210798	MURALEEDHARAN B G	KOZHIKODE (CALICUT)	2	
99	LT050571009011298	LEENA PHILOMINA A S	KOCHI	3	
100	RN181270025290398	RAJESH BHATN	KOTTAYAM	4	
101	GG300473026031198	G SREEKUMAR	KOLLAM	5	
102	HV300566026091298	HAREESH V	THIRUVANANTHAPURAM	6	
103	BB100180077271099	B SATHYA BAMA	THIRUVANANTHAPURAM	7	
104	JS251272100021298	JYOTHI M	THIRUVANANTHAPURAM	8	
105	LT100470100150398	LIBIMOLE A B	THIRUVANANTHAPURAM	9	
106	NP221169082010498	NV SOMARAJAN	KANNUR	10	
107	MK210569082011298	MANOJ P	KOZHIKODE (CALICUT)	11	
108	SP110569120190398	SASI KUMAR S K	KOCHI	12	
109	SV141167120040199	SATHYA NARAYANA PRASAD N	KOCHI	13	
110	GC020269065041295	GSUNDER RAJAN	ZTI-SZ (CHENNAI)	1	ZTI SOUTH ZONE
111	JA120475065141099	JKAVITHA	ZTI-SZ (CHENNAI)	2	

CENTER 3 – KOLKATA – 42

MASTER SL NO	Employee ID	Employee Name	Present Office	State SN	State
112	UK030176036251099	UPENDRA KUMAR	BHAGALPUR	1	BIHAR
113	AK150478036251099	ASHUTOSH KUMAR	BHAGALPUR	2	
114	UR150570072300596	UTTAM KUMAR	MUZAFFARPUR	3	
115	NM160167072140296	NAGENDRA SINGH	MUZAFFARPUR	4	
116	AB020171121280695	ANJANI KUMAR SINHA	PATNA	5	
117	PB150175121301198	PRAKASH	PATNA	6	

118	JP010674074011199	JYOTSNA KUMARI	RANCHI	1	JHARKHAND
119	SK311275095301199	SIDHARTH SHANKAR PANDEY	JAMSHEDPUR	2	
120	SY180272095090497	SATISH KUMAR	JAMSHEDPUR	3	
121				4	
122	SG190475090050400	SANJIB KUMAR HALDER	SHILLONG	1	NER
123	AA170867101021198	AMIT SENGUPTA	AGARTALA	2	
124	KP030471122131099	KULEN CH DEKA	TINSUKIA	3	
125	RR051272128290200	RANJIT KUMAR SINHA	GUWAHATI	4	
126	RS160672041261099	RAMANCHAL PANIGRAHI	ROURKELA	1	ODISHA
127	GG230974083050100	GVSPRABHU	BERHAMPUR	2	
128	SB080672083281099	SURJYA PRASAD MAJHI	BHUBANESHWAR	3	
129	MD010173123221099	MADHUSUDAN PARHI	KEONJHAR	4	
130	SS180673123251099	SUBRAT KUMAR SAHOO	BHUBANESHWAR	5	
131	CC110776116221099	CHITTARANJAN ROUT	BHUBANESHWAR	6	
132	PP270678116251099	PSRINIVAS POTTA	BERHAMPUR	7	
133	JK081173031010500	JAIDEEP CHATTERJEE	SILIGURI	1	WEST BENGAL
134	RM010776031271099	RANJAN KUMAR	DARJEELING	2	
135	SN140470028080296	SUBHASIS KUNDU	HOWRAH	3	
136	SG130675028100300	SANGEETA MUKHOPADHYAY	HOWRAH	4	
137	AS040176071070400	ARINDAM BITT	DURGAPUR	5	
138	PA040175071141098	PRANAB CHATTERJEE	JALPAIGURI	6	
139	SS120972090030500	SUMITA RAY	BARRACKPORE	7	
140	DD191066091200993	DEBKUMAR MAITRA	KOLKATA	8	
141	PP031166091280592	PRABIR KUMAR BOSE	DURGAPUR	9	
142	TU161273092070400	TARUN MANDAL	KOLKATA	10	
143	PP200672099290196	PARTHA DEBNATH	PARK STREET	11	
144	SJ090168099260293	SUBRATA RAY	PARK STREET	12	
145	AR010169101070296	ASHOK KUMAR DAS	JANGIPUR	13	
146	GS020171101030700	GITA BISWAS	KOLKATA	14	
147	SN171272101060400	SANJOY DAS	KOLKATA	15	
148	SJ201168101160791	SANTANU GHOSH	KOLKATA	16	
149	SR280869101301198	SIDDHARTHA SHANKAR MAURYA	PORT BLAIR	17	
150	AM180966103260592	ANJAN MAJUMDAR	JANGIPUR	18	
151	MG150477112181099	MAHESH PRASAD	KOLKATA	19	
152	PR020873019260400	PALLAB KUMAR	ZTI-EZ	1	ZTI EAST

		CHAKRABORTY			ZONE
153	RS040274019160800	RAJIB DUTTA	ZTI-EZ	2	

CENTER 4 – AHMEDABAD – 38

MAST ER SL NO	EmployeeID	Employee Name	Present Office	State SN	State
154	PR120373008060798	P KANNAN	BHARUCH	1	GUJARAT
155	MK271175034111099	MITESH K CHAUDHARY	SURAT	2	
156	JD220475046141099	JIGNESH	RAJKOT	3	
157	RH150569046280892	RAKESH	RAJKOT	4	
158	NH040671035121199	NATU KATARA	AHMEDABAD	5	
159	BI311274035060798	BRIJENDRA KUMAR PRABHAKAR	AHMEDABAD	6	
160	DV010172067251099	DINESH KUMAR	VAPI	7	
161	KP040672102151099	KMANOHARAN	VATWA	8	
162	NM190275125011199	NAVNEET M DONGARWAR	BANDRA	1	MAHARASHTR A
163	SS070378125310107	SREEJITH S L	BANDRA	2	
164	RG231276125271099	RADHIKA G WAKODE	BANDRA	3	
165	SS140174001191199	SHIV SHANKAR SHARMA	THANE (SOUTH)	4	
166	MN300976029251199	M GIRISH MENON	PUNE	5	
167	MJ290676064151199	MANORANJAN KUMAR	THANE (SOUTH)	6	
168	SS070875069010300	S RAMLEELADHAR	SOLAPUR	7	
169	NN130372073241199	NA GURUNATH	PUNE	8	
170	MM050475093031199	M SATISH KUMAR	NASIK	9	
171	KV220774096031199	KD MALLESHWARA RAO	AURANGABAD	10	
172	NM160474111251099	NITIN MAHADEV PATRE	AKOLA	11	
173	MH290672111121199	MILIND HARISHCHANDRA SAHARE	NAGPUR	12	
174	SH310775048041199	SUBHASH CHAND MEENA	JAIPUR	1	RAJASTHAN
175	AS200477011040598	AKHIL KASLIWAL	UDAIPUR	2	
176	AR270666011110491	ANIL DUGGAD	UDAIPUR	3	
177	AM240576045050598	ANIL JASORIA	KOTA	4	
178	HL250773045051199	HIMANSHU KAUSHIK	KOTA	5	
179	KV230573050050598	KHAGESH KUMAR JINDAL	JAIPUR	6	
180	RR230473050050598	RAKESH KUMAR JAIN	JODHPUR	7	
181	SS190576050051199	SOVAN DUTTA GUPTA	JAIPUR	8	
182	HH040776063041199	HARSH V PAHARIYA	JAIPUR	9	
183	KC020471063111096	KISHORE AGNANI	JODHPUR	10	

184	BE050771068041199	BALAMURUGAN E	INDORE	1	MADHYA PRADESH
185	VO110777020181099	VIKRAM KUSHWAHA	UJJAIN	2	
186	AA071172010161198	ASHOK KUMAR MOHANTY	SAGAR	3	
187	LH100173062271099	LOKENDRA SINGH	INDORE	4	
188	BD071275070011199	BIJAY KUMAR SHARMA	JABALPUR	5	
189	RB040274074221099	RAKESH KUMAR SHARMA	BHOPAL	6	
190	MM021073119270398	M SHIVA SHANKAR	BHOPAL	7	
191	MS030268055080993	MINI SAJU	RAIPUR	1	CHHATISGARH

CENTER 5 – BANGALORE -

MASTER SL NO	EmployeeID	Employee Name	Present Office	State SN	State
192	DV180670033060498	D S CH SEKHARA KUMAR	GUNTUR	1	ANDHARA PRADESH
193	JS080865033301198	J SRINIVAS	VIJAYWADA	2	
194	GG090571017301198	GRL NARAYANA	RAJAHMUNDRY	3	
195	PP260669110251096	PVCHANDRA SEKHAR	KADAPA	4	
196	EE190870110220496	E LAKSHMINARAYANA	KADAPA	5	
197	DD100770107040598	DHH SWAMY	VISAKHAPATNAM	6	
198	MM050870107310599	M RAVI KUMAR	VISAKHAPATNAM	7	
199	VN190774006260496	VANI K	BENGALURU (KORAMANGALA)	1	KARNATAKA
200	BN240472002131099	BALACHANDAR K	CHIKMAGALUR	2	
201	RP190788005220108	RUBY JOSEPH	MYSORE ROAD	3	
202	PK230574012131099	PRAJKUMAR	GULBARGA	4	
203	BV020772021311095	BHARATI VR	HUBLI	5	
204	SS040866017111295	S SUNEEL KUMAR	RAICHUR	6	
205	JB201271079231194	JYOTI N HEJMADI	BENGALURU (CENTRAL)	7	
206	RS071170079311095	REVATHI MG	BENGALURU (MALLESWARAM)	8	
207	MH050274079201295	MUKUNDA S	BENGALURU (MALLESWARAM)	9	
208	KN140669079221295	KIRUBALATHA N V	BENGALURU (CENTRAL)	10	
209	VG200874080181199	VENKATESWARA RAO G	BENGALURU (CENTRAL)	11	
210	SR310575077301198	SUNIL K	PEENYA	12	
211	SV280273077080197	SUMATHI C	PEENYA	13	

212	RD090765060301198	R NARASIMHA MURTHY	BENGALURU (ELECTRONIC CITY)	14	
213	SS230271060070100	SAJITHA B	K R PURAM (WHITEFIELD)	15	
214	MC120779060130100	MAMATHA KUMARI MR	K R PURAM (WHITEFIELD)	16	
215	JJ141272108301095	J R NARASIMHAMURTHY	YELAHANKA	17	
216	SN080378108100200	S SAMPATH KUMAR	MYSORE	18	
217	TT050972108150300	T BALARAJ	BENGALURU (ELECTRONIC CITY)	19	
218	SS050371077131195	S SRINIVAS KUMAR	BENGALURU (KORAMANGALA)	20	
219	NU270275029250698	NEETHA UDAYASHANKER	MANGALORE	21	
220	JJ040472022151099	JRT SRIKUMAR	UDUPI	22	
221	TM020386014140307	T PRASHANTH	SHIMOGA	23	
222	PC020676007111099	PJOHN PETER	BELLARY	24	
224	MG050768054280592	M VENKATESHWARLU	KUKATPALLY	1	TELANGANA
225	EV220569054120494	E SRINIVAS	KARIMNAGAR	2	
226	VV230868017301198	V RAMA MOHAN	HYDERABAD (MADHAPUR)	3	
227	KK091072018150997	KSRINIVASA BABU	WARANGAL	4	
228	NN230770018230597	NUNE RAMESH	WARANGAL	5	
229	TT010569061140596	T JANARDHAN RAO	PATANCHERU	6	
230	AA050871044080798	A BALNATH	NIZAMABAD	7	
231	KK010569044170792	K KRISHNA	PATANCHERU	8	
232	TT100370106021198	TJANARDHAN	HYDERABAD (MADHAPUR)	9	
233	LL231170109021198	LDNORBERT	KUKATPALLY	10	
234	VT160572109011298	V HEMAMALINI	HYDERABAD (MADHAPUR)	11	
235	AA210568115280693	A BABU REDDY	HYDERABAD (BARKATPURA)	12	
236	KK101069115241198	K NAGESWAR RAO	HYDERABAD (BARKATPURA)	13	
237	KK100869115290794	K V S RAMA RAO	HYDERABAD (BARKATPURA)	14	
238	VV010468115081093	V V CHANDRA SEK HAR	HYDERABAD (MADHAPUR)	15	
239	MG061076117121199	MAHAVIR K RAY	GOA	1	GOA
240	SS300379117151099	SURAJ S K	GOA	2	

SCHEME OF EXAMINATION

Present Cadre	-	Data Processing Assistants
Promoted Cadre	-	Programmer
Mode of Examination	-	OMR Based
NO of PAPERS	-	SINGLE
PART I	-	Logical & Mathematical Reasoning
PART II	-	Computer Science
Duration	-	3 Hours (90 minutes)
No. of Questions	-	75 Question per PART (total 150 questions)
No negative marking proposed		

SYLLABUS OF EXAMINATION

1. Mathematical Logic: Propositional Logic: First order Logic:

2. Probability: Conditional Probability: Mean, Median, Mode and Standard Deviation: Random Variables: Distributions: Uniforms, normal, exponential, Poisson, Binomial.

Set Theory & Algebra: Sets, Relations, Functions, Groups, Partial Orders, Lattice, and Boolean algebra.

3. Programming and Data Structures: Programming in C, Functions, Recursion, Parameter passing, Scope, Binding, Abstract Data types Arrays, Stacks, Queue, Linked List, Trees, Binary search trees, Binary heaps, Object Oriented Programming Concepts- Object, Class, Inheritance, Polymorphism, Abstraction and Encapsulation, Exception Handling, Pseudo code Level Assessment.

4. Algorithms: Analysis, Asymptotic, Notation, Notions Of Space And Time Complexity, Worst And Average Case Analysis, Design.

5. Databases: ER-model, relational model (relational algebra, tuple calculus), database design (integrity constraints, normal forms), query languages (SQL), file structures (sequential files, indexing, B and B+ trees). Information systems and software engineering information gathering, requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project, testing, implementation, maintenance.

6. Computer Networks: ISO/OSI stack, LAN technologies, Flow and error control techniques, routine algorithms Congestion control, TCP/UDP and sockets, IP(v4), IP(v6), Application layer protocol (ICMP, DNS, SMTP,POP,FTP,HTTP), Basic concepts of Hubs, Switches, Gateways and Routers. Wireless Technologies, Network Security-Basic Concepts of Public Key and Private Key Cryptography, Digital Signature, Firewalls.

7. Basic concept of Operating System: Windows, Linux

8. Basic knowledge of MS office:

- a. Font style, clipboard, paragraph formatting, text editing tools, insert/add media, page layout, referencing, outlining etc. in Ms Word.
- b. Calculation (add, subtract, sigma, avg, mean, mode median etc.), Conditional Formatting, Cell and Sheet referencing, Accounting Formulas , Macro, pivot, graph etc. in Ms Excel.
- c. Transition , animation , custom effects, text formatting, themes , shortcut keys etc. in Power Point