

“This is only a **preview** of the exam questions. To take the actual exam, please refer back to the bulletin and click on the ‘**Click here to go to the Internet Exam**’ link at the bottom of the bulletin.”

Programmer Analyst Series

Service-wide

Training and Experience Evaluation

The California civil service selection system is merit-based, and eligibility for appointment is established through a formal examination process. The service-wide Programmer Analyst examination consists of a Training and Experience evaluation used to evaluate your education, training and experience.

This Training and Experience evaluation is a scored component accounting for 100% of your rating in this examination. It is important to complete the evaluation carefully and accurately. Your responses are subject to verification before appointment to a position.

**Section 1: Task Ratings for Associate, Staff, and Senior (Specialist and Supervisor)
 Programmer Analyst**

Instructions:

Using the rating scales provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
1	Developing computer programs/applications to meet organizational requirements and expectations.
2	Developing and/or maintaining computer program/application documentation for ease of understanding and ongoing support.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
3	Developing and/or maintaining computer program/application documentation for each phase of the software development lifecycle (i.e., design, development, testing, implementation, maintenance).
4	Developing detailed design specifications for computer programs/applications in order to ensure effectiveness and adherence to established standards.
5	Writing code using programming languages (e.g., JAVA, Assembler, COBOL, Natural, C, VB.Net) in order to develop computer programs/applications.
6	Querying databases to retrieve and update data using database query languages (e.g., Structured Query Language).
7	Enhancing/maintaining existing computer programs/applications to increase operating efficiency, adapt to new requirements, or correct errors.
8	Participating in design and/or code reviews of the computer program/application structure to ensure adherence to standards.
9	Defining and documenting technical requirements to design, develop and support systems.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
10	Defining and documenting data and process flows to meet the system requirements.
11	Defining and developing computer programs/applications with reusable components to streamline development and improve consistency and maintainability.
12	Incorporating reusable application components to streamline development and improve consistency and maintainability.
13	Identifying failing or poorly performing application components to assess the need for modifications and/or replacement.
14	Identifying causes of critical system failures and service interruptions to restore normal operations.
15	Utilizing version control processes to track changes to software, manage ownership of software and ensure the correct version is in use.
16	Incorporating data integrity control methods (e.g., validation, auditing) in the application design process.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
17	Conducting tests (e.g., unit, integration, stress, regression) to ensure the software functions as designed.
18	Designing testing scenarios to meet functional and technical requirements.
19	Developing and documenting testing configurations to support testing conditions (e.g., test scripts, data sets).
20	Providing technical assistance to resolve software, hardware, operating, and/or network problems.

Section 2: KSA Ratings for Associate, Staff, and Senior (Specialist and Supervisor)
Programmer Analyst

Instructions:

Using the rating scale provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have applied this knowledge or ability for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months
21	Knowledge of general operating principles, capabilities, and limitations of information technology system equipment.
22	Knowledge of system development methodologies (e.g., Systems Development Lifecycle, Agile, Waterfall, Iterative).
23	Knowledge of various programming languages (e.g., JAVA, Assembler, COBOL, Natural, C, VB.Net).
24	Ability to update and maintain computer programs/applications.
25	Knowledge of database design principles and techniques to ensure organizational requirements are met.
26	Knowledge of principles and procedures of computer programming/application development.
27	Ability to analyze business requirements and develop technical solutions.
28	Knowledge of debugging/troubleshooting tools and techniques used to assess problems within a computer program/application.
29	Knowledge of basic mathematical principles to define equations and manipulate variables.

ITEM #	Years of experience I have applied this knowledge or ability for: <ul style="list-style-type: none">▪ More than 5 years▪ More than 3 years and up to 5 years▪ More than 1 year and up to 3 years▪ More than 6 months and up to 1 year▪ 0 to 6 months
30	Ability to determine the accuracy of various mathematical calculations and functions.
31	Ability to write technical reports to ensure processes performed are appropriately recorded.

Section 3: Task Ratings for Staff and Senior (Specialist and Supervisor) Programmer Analyst

Instructions:

Using the rating scales provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
32	Designing databases using specifications within a defined architecture to provide efficient data storage/retrieval.
33	Performing database administration functions (e.g., design, build, maintain, backup, recovery, user administration) to provide an application foundation and ensure data integrity and security.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
34	Conducting and facilitating meetings (e.g., walkthrough, demos, training, status updates) with stakeholders.
35	Preparing application system design diagrams to facilitate understanding by customers and team members.
36	Utilizing enterprise level change control policies to properly manage application/system changes across the organization.
37	Providing input to management regarding the amount of time spent and resources required to complete projects and work assignments.
38	Developing and implementing effective security practices to ensure system is safe from unauthorized users.

Section 4: KSA Ratings for Staff and Senior (Specialist and Supervisor) Programmer Analyst

Instructions:

Using the rating scale provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have applied this knowledge or ability for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months
39	Knowledge of Information Technology (IT) techniques for sorting, searching, and querying data (e.g., Structured Query Language).
40	Ability to interpret data models (e.g., Entity Relationship Diagrams) to develop an application.
41	Ability to design data models to meet system requirements.
42	Knowledge of methodologies and standards for keeping sensitive data secure.
43	Knowledge of application deployment methodologies to develop and perform necessary migration tasks (e.g., data conversion, software installation/instructions, migration plans, change and release management) to properly manage deployments.

Section 5: Task Ratings for Senior (Specialist and Supervisor) Programmer Analyst

Instructions:

Using the rating scales provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
44	Acting in a lead capacity to monitor the work of a work team to ensure that it meets quality, quantity, and timeliness standards.
45	Mentoring staff to improve performance and productivity.
46	Participating in planning high profile and/or critical projects from inception to implementation.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
47	Documenting project objectives, scope, and charter to define and initiate the project.
48	Monitoring and managing controls (e.g., project plans, schedules, risk analysis) to ensure the timely completion of work tasks.
49	Outlining the work tasks (e.g., project timelines/schedules, action plans) required to complete projects or assignments.
50	Prioritizing and scheduling work to be completed by a project team (e.g., developing an action plan for a work assignment or determining the assignment and order of project steps to be completed by each team or task force member).
51	Resolving conflicting priority requests from various programs or customers to meet needs.
52	Maintaining project schedules by updating and revising activity and milestone schedules, resource requirements, and other task-related information to ensure accurate, updated project information and statistics.
53	Documenting deliverables (e.g., service requests, status reports) to track completion of assigned tasks.

Section 6: KSA Ratings for Senior (Specialist and Supervisor) Programmer Analyst

Instructions:

Using the rating scale provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have applied this knowledge or ability for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months
54	Knowledge of techniques used to design interfaces (e.g., Web Services, Geographical Information System, Online Mainframe Screens, Graphic User Interface).
55	Knowledge of technologies that support electronic publishing such as word processing software, spreadsheet software, presentation software, and database software.
56	Knowledge of usability standards and testing scenarios.
57	Ability to delegate work assignments at the appropriate level of responsibility.
58	Ability to develop work plans and other project management documents to monitor work projects.

Section 7: Task Ratings for Senior (Supervisor) Programmer Analyst

Instructions:

Using the rating scales provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
59	Participating in the acquisition of software and/or hardware by following organizational procurement processes.
60	Administering provisions of collective bargaining agreements to ensure compliance in the course of supervising represented employees.
61	Resolving disagreements and conflicts between staff members to achieve a positive work environment.
62	Conducting team-building sessions with work unit to establish a more cohesive and productive staff.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
63	Conducting training needs analysis to determine the level and type of training needed by staff.
64	Participating in the interview and hiring process to provide input in the selection process.
65	Assisting in the development of control agency documents (e.g. Feasibility Study Reports, Special Project Reports, Budget Change Proposals, contracts) to obtain project funding and/or approval.
66	Documenting employee performance and completing performance evaluations and probationary reports.
67	Establishing controls (e.g., project plans, schedules, risk analysis) to ensure the timely completion of work tasks.
68	Monitoring the use and application of work unit and organizational policies, procedures, and guidelines in the completion of program/project activities to ensure adherence with standards.
69	Identifying operational needs using workload forecasting, response time evaluation, and task management techniques.
70	Performing a cost/benefit analysis of recommended solutions to application development problems.
71	Ensuring product-licensing agreements are followed according to department contracts.

ITEM #	<p>Years of experience I have performed this task for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months <p>Knowledge related to performing this task:</p> <ul style="list-style-type: none"> ▪ Extensive Knowledge I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task. ▪ Substantial Knowledge I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered. ▪ Moderate Knowledge I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations. ▪ Limited Knowledge I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively. ▪ No Knowledge I have no knowledge of how to perform this task or what it may entail.
72	Developing and/or supporting backup and recovery procedures consistent with the organization's disaster recovery plan.
73	Utilizing security policies for granting permissions to authorized users of application systems and data.

Section 8: KSA Ratings for Senior (Supervisor) Programmer Analyst

Instructions:

Using the rating scale provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and WORK EXPERIENCE whether paid or volunteer.

ITEM #	<p>Years of experience I have applied this knowledge or ability for:</p> <ul style="list-style-type: none"> ▪ More than 5 years ▪ More than 3 years and up to 5 years ▪ More than 1 year and up to 3 years ▪ More than 6 months and up to 1 year ▪ 0 to 6 months
74	Knowledge of gap analysis techniques to identify deficiencies.
75	Knowledge of supervisory principles, practices, and techniques to plan, oversee, and direct the work activities of staff.
76	Knowledge of Equal Employment Opportunity principles, regulations, and objectives to support equal employment opportunity policies and goals.
77	Knowledge of leadership practices and motivational techniques to maintain a productive work environment.
78	Knowledge of the progressive disciplinary process.
79	Ability to assess and identify staff training needs to improve staff competency and productivity.
80	Ability to lead and motivate staff to maximize productivity and accomplish objectives.
81	Ability to identify performance issues and opportunities for improvements in the system being supported.
82	Knowledge of project management tools, techniques, and methodologies.